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W. WARREN SHAW

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"THE LOST VOCAL ART"
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WITH AN INTRODUCTION BY
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EDITOR OF
"THE MUSICIAN"



PHILADELPHIA & LONDON
J. B. LIPPINCOTT COMPANY

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MADE IN THE
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TO
NOAH H. SWAYNE
FRIEND AND PUPIL
OF MANY YEARS

INTRODUCTION

VARIOUS efforts have been made in recent years to reduce the practice of vocal art to a scientific basis. The wholly desirable objective of thus removing the bitter controversial elements from the teaching of singing has, however, never been even remotely attained because the word "science" has been misapplied to theories and beliefs rather than to incontrovertible laws recognized in physical laboratories. Basically, the sounds produced by the human voice are resultant of the identical vibratory processes that yield to testing, analysis, measurement and classification in purely scientific research. These fundamental truths do not admit of differences of interpretation; they serve as a reliable foundation for a school of vocal pedagogy which recognizes only proven phenomena. When superior musical talent and disciplined imagination are directed to these basic principles the results must lead to a finely perfected vocal art.

For many years it has been my privilege

to follow from a journalistic vantage point the sincere and exhaustive researches made by Mr. Shaw in his pioneering for a popular understanding and acceptance of these truths culled directly from the acoustic discoveries of such authorities as Hallock and Muckey. I have been witness also to the wholly practicable application of these principles to a full flowering of vocal art.

This volume, based largely on a series of articles previously published in *The Musician*, emphasizes the need of knowledge of facts in the physical vocal phenomenon and explains the dual mind of man which makes all kinds of singing possible. And because it deals only with demonstrated doctrines, it opens the way, I believe, for a general acceptance of first principles to which all intelligent vocal pedagogues will eventually subscribe. It standardizes the basic facts of voice production without depriving the singing master or the singer of individual alertness and ingenuity in applying such definite laws to the processes of singing as a personal art, one which interprets and glorifies complex emotions that defy the scientist's foot-

rule—an instrument which can never hope to measure the capacity nor the workings of the human soul.

PAUL KEMPF
Editor of
The Musician

PREFACE

'ALTHOUGH the principles set forth in my earlier work "The Lost Vocal Art" were endorsed by many of the world's most celebrated singers and have stood the test of time and experience, it has been urged that in view of recent developments in the vocal field it is now possible to emphasize as facts certain things which were formerly matters of conjecture. With such knowledge it is also possible to bring out more clearly the best means of attaining desired ends and of avoiding the highways and by-ways which lead to vocal difficulties.

The interfering factors are specifically set forth and practical suggestions given for their removal. Misleading terminology which, perhaps more than anything else, has served to confuse the minds of students, is dealt with in a comprehensive manner and presents the subject of vocal terminology in such a light as to clarify the hitherto obscure meanings of terms which are now in general use.

The important subject of vocal technique is presented in a manner which properly emphasizes its necessity and gives practical suggestions which cannot fail to be of great benefit to all vocalists in developing their own vocal technique. The ideas concerning breath control have been subjected to the severest tests in practical application and in all cases the results have been favorable in the highest degree. The ideas are revolutionary but I have taken care to prove my ground and disclose many time-worn fallacies generally accepted as truths.

I acknowledge with deep gratitude and appreciation the valuable aid of Dr. Floyd S. Muckey, who in elucidating the facts of anatomy, physiology and acoustics with reference to the human voice has rendered an inestimable service, not only to me but to the vocal world at large.

W. WARREN SHAW

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AUTHENTIC VOICE PRODUCTION

CHAPTER I

AUTHENTIC VOICE PRODUCTION

AUTHENTIC VOICE PRODUCTION has for its main purposes the standardization and stabilization of fundamental principles of theory and practice in voice production which will serve to prevent the further teaching of doctrines which represent falsities, and the use of terms which are misleading.

2.—The presentation of facts concerning voice and voice culture which are at the present time not thoroughly understood and which may be used to great advantage by all teachers and singers in perfecting their art.

When a destructive conflagration is discovered, the first step to be taken is to use the best means possible of checking its spread or progress and to extinguish the flames. The next step is to devise means of reconstruction and means of safeguarding the interests of those who may be endangered by such conflagrations.

The fires of falsity arising from ignorance of important facts are burning brightly in

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the vocal field and are not only threatening dire calamity but actually spreading devastation in their path.

The preservation of voices and improvement in vocal methods depend very largely upon a more precise knowledge of cause and effect in the vocal phenomena, and the safeguarding of its continuous progress along correct lines depends upon the establishment and recognition of principles which are fundamentally sound.

As science is knowing and art is doing, it is obvious that knowledge serves to prevent decay and to promote the development of art.

The art of voice production has always been evanescent, because it has never rested upon a truly scientific basis.

The art of singing has had its flourishing periods and its periods of decline generally depending upon the number of talented and vocally gifted singers of the time who sang and taught instinctively and intuitively. Their knowledge was largely from instinct.

Now it is well to understand that knowledge comes to us along three separate and distinct avenues (1) INSTINCT, (2) REASON, and (3) REVELATION. The first refers to in-

tuition, feelings, and emotions; the second refers to the consideration of facts and their bearing upon the subject. The third is understood and known only to those to whom it has come. This refers to religion and depends upon receptivity. It is spiritual insight.

Instinct is an attribute of the subjective mind in terms of the old psychology.

While we recognize the wonderful powers of the subjective mind we must remember that in all the affairs of this world, reason, the property of the objective mind or brain, should exert the final or governing influence. By this we mean inductive reasoning or from particulars to generals. This is the peculiar property of the objective mind. The subjective mind is the seat of the emotions, of the indestructible memory, and reasons most perfectly by deduction (from generals to particulars) but never by induction. Now as the subjective mind reasons from suggestion whether wrong or right it does not in itself constitute a reliable factor.

From this it becomes clear that the inductive reasoning of the objective mind must be used to stabilize vocal art. Knowledge of a sufficient number of facts is one of the pre-

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requisites of scientific knowledge, and one of these undeniable psychological facts is that in great singing all else is temporarily forgotten except the delivery of the message. Automatic activity of the voluntary muscles from correct habits, and normal activity of involuntary muscles should characterize the physical processes. The subjective mind has usurped the place of leadership among artists. This is always dangerous, especially when the mind is under the influence of wrong suggestion.

The peculiar endowments of the subjective mind, the seat of the emotions, explains the meritorious conduct of highly gifted singers (as Singers) acting under the influence of favorable Suggestion. They can perform magnificently, yet when asked how they do it, they can seldom tell because they do not know. When they attempt to explain, their absolute ignorance of cause and effect from rational understanding is betrayed—their explanations are oftentimes pathetically absurd.

These instinctive singers are chiefly the ones who scoff at Science as having anything to do with Art. They sing and teach from

Intuition, and have no rational understanding of the laws which govern their vocal activities.

For instance, one very celebrated Artist who at the end of his singing career commenced to teach, taught his pupils to hold up the uvula for the purpose of obtaining added resonance in the voice.

This is but one instance of the absolute ignorance of many successful singers who are to be found in the ranks of vocal pedagogues. Some of them teach through imitation. Such methods may have a certain value, but withal a very limited value. Pupils who can imitate are comparatively few and when they do imitate, and inadvertently get it right, they are incapable of imparting knowledge because they have no definite knowledge to impart.

Whatever good influence imitation may have is generally offset in such cases by inaccurate explanations of what they conceive to be the facts. They are misled by appearances, and when any vocal difficulty presents itself in their pupils' voices they do not know where the cause of the trouble lies, how to find it, or how to remove it—they try this,

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and they try that, in a haphazard manner, hoping to hit upon a solution of the vocal difficulty.

Thus it may be seen that it is most necessary for the welfare of vocal art that singers who become teachers should know their subject thoroughly; especially because by the confidence they inspire through their own demonstration from unknown causes they are able to do the most harm by incorrect explanation.

The Authentic School of Voice Production sets forth from the Physical Standpoint:

1. Voice is air waves.
2. The analysis of voice is the separation into its elements or partial tones.
3. Partial tones include the fundamental tone which is produced by the vibration of the cords in their entirety, and the overtones which are the vibrations of the segments of the cords. Both are reënforced by resonance.
4. Necessary relaxation in tone production refers exclusively to interfering muscles, the extrinsic muscles of the larynx. The true vocal muscles are never relaxed during phonation.

5. In the throat are two distinct sets of muscles diametrically opposed in their normal functioning—one set is quiescent during the act of swallowing and the other should be quiescent during the act of tone production.
6. The tone-producing muscles are involuntary in their action. The interfering muscles are voluntary. Hence, interference can be overcome. But without understanding and will there can be no consistent progress in vocal development. On the other hand with correct understanding and the application of will power there is a safe guarantee of a very remarkable development for all voices.
7. All vocal tones are originated by the true vocal cords. The false cords which are directly over them have nothing constructively to do with tone production.
8. All tonal vowel sounds in the human voice are complex—that is, they contain both fundamental tone and a number of overtones.
9. In producing each and all vowel tones the vocal cords vibrate as a whole and in segments. Therefore, from the scientific

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definition of pure tone, no vowel tone is pure no matter how beautiful it may sound.

10. The only pure tone possible in the human voice is the hum which practically is the fundamental tone without audible overtones.
11. In order to produce the best quality of voice the fundamental tone must be stronger than any of the overtones. The fundamental gives bigness and fullness to the voice; the overtones in proper conjunction with the fundamental tone give richness to the quality which cannot otherwise be obtained.
12. Voice Production without interference and with full use of resonance automatically economizes the use of the breath and eliminates the necessity of willfully controlling the breath in singing.
13. Breath support must be interpreted as the readiness of the breath in exhalation to supply the necessary air for the vibration of the vocal cords. There is no other breath support.

14. The natural voice as generally understood is frequently most unnatural, by reason of acquired vocal defects. The really natural voice is one which is produced in conformity with the natural law, which is non-interference with the action of the vocal cords and the full use of resonance.
15. The functioning of the vocal organ correctly used is precisely the same in singing and speaking. The difference is in degree—not in kind—and refers to the sustaining of definite pitch.
16. Rhythmic singing requires rhythmic breathing.

Authentic voice production sets forth from the Psychological standpoint:

1. The dual mind of man.
2. The concurrent activities of the objective and subjective mind. "The objective mind takes cognizance of the objective world. Its media of observation are the five physical senses. The subjective mind takes cognizance of its environment by means independent of the physical senses. It perceives by intuition. It is the seat of the emotions and the

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store-house of memory. It performs its highest functions when the objective senses are in abeyance." (Hudson.) It is the spark of divinity in humanity. It is the soul.

3. The objective and subjective minds each have properties not shared in by the other. Other properties are shared in common. The objective mind is the seat of rationality. It reasons inductively—that is, from particulars to generals. It is cold, calculating and unemotional. The subjective mind on the contrary reasons only deductively—that is, from generals to particulars. It is incapable of inductive reasoning.

During the span of life upon the earth the reasoning objective mind must be in the ascendancy in the normally constituted rational man. The ascendancy of the subjective mind would lead to abnormal conditions, even to the point of insanity.

During the span of life upon earth the subjective mind, the soul, is being educated for eternity—for good or for evil. It is the subconscious property which is of such importance to understand. It is constantly

amenable to suggestions from the conscious, objective mind, and reasons perfectly by deduction. Herein is contained the responsibility of man for his thoughts and deeds in general, and why he is in a sense the master of his fate.

3. The emotions may be governed so that fear and its attendant evils may be avoided. Confidence from knowledge is not difficult to acquire, but without knowledge a forced confidence is easily stampeded to the point of abject terror and a frequent disarrangement of the nervous system.

More complete information bringing fuller knowledge of actuating causes in the vocal phenomena contingent upon the mental attitude, natural and acquired, may be found in Thomas J. Hudson's work entitled "A Scientific Demonstration of the Future Life". The lucid explanations of mental processes contained in this work will be found invaluable to all singers and teachers of singing.

CHAPTER II

THE OUTLOOK FOR AMBITIOUS STUDENTS

THE United States is alive with a vast army of vocal enthusiasts whose ambition to accomplish major results in the various branches of vocal art is unbounded.

Judging by the percentage of those whose attainments have been such as to attract nation-wide or world-wide attention, it must be confessed that the percentage of successful singers among those possessing discernible potentialities is altogether too small.

This condition is due to several definite causes, chief among which I believe to be incorrect preliminary vocal training. This is due not to the insincerity of teachers, for vocal teachers are as a rule hard-working sincere people who are putting forth their best endeavors in the interest of their pupils and reaping therefrom but a small reward—if their reward is to be measured in dollars

and cents or by fair appreciation on the part of pupils.

On the other hand a countless number of pupils are talented, faithful in their work and in appreciation of their teachers, but consistently fail to arrive. Some of these are of the "stick to the ship" variety, who sink or swim with their load of false theories and impossible practices heaped upon them by their conscientious teachers who have but slight knowledge of the voice.

Desirable voice production in song and speech is something which is of living interest to all human beings who are actuated by the wish to sing and speak well. To those who are ambitious for public careers, it is imperative that the voice should be as beautiful as possible and always agreeable and expressive.

To those whose ambition does not impel them to seek the highest possible goal of vocal achievement, it is still a matter of more or less concern that their voices likewise should be as beautiful as possible and at all times agreeable and expressive.

Now as concerns opportunity for public careers, a preliminary survey of the present

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and prospective vocal field discloses that it is unlimited. The opera in this country is in its infancy. While Italian, French and German children know their operas, and sing, whistle and hum them, the average American outside the great centers of population knows very little of them—but as they become musically enlightened they develop a hunger for them. This means a constantly growing demand for opera which must sooner or later be satisfied.

Radio singing presents a new field of vocal endeavor.

The radio is doing great work in disseminating musical interest. To be sure radio offerings are not at present always of the highest type—but are gradually improving.

Strictly speaking, appraisal of vocal ability of artists heard only over the radio is at present not at all accurate. Radio stars are not always satisfactory singers when they appear in person before the public. Some of them could not be heard at the rear of an average sized concert hall without the aid of a loud speaker.

Radio stars who are only such belong in

a constellation all their own, but they are useful in their sphere.

The most effective use of the voice, particularly in Radio singing, depends upon knowledge of the relationship of fundamental tone, overtones, resonance, and the correct application of power.

This is none the less true of the use of the voice in Concert, Oratorio and Opera singing; but on account of the peculiar conditions which are present in Radio singing, the importance of correct understanding of voice production is especially necessary. Major and minor faults in voice production and diction are here strongly accentuated.

Successful radio singers are not necessarily well equipped for appearances in person on the stage or upon the concert platform. On the other hand, a fairly successful concert or opera singer is not always an acceptable radio singer. The man in the control room can give interesting data corroborating the truth of this statement—and so it becomes a matter of vital interest to performers to know the why and wherefore of it all.

When the singer becomes acquainted with

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his own voice—through the sense of hearing (educated) and local physical sensations—to the degree of appreciating the difference between a series of tones in which the fundamental tone is dominant—that is, when it is stronger than any of its overtones—he holds the key to the correct use of the voice.

The dynamics of the voice, beauty of quality, the ability to sustain the lyric passages through the equalization of the scale, ability to crescendo and decrescendo with uniformity, to preserve the necessary nuances in song, to control the vocal power, to properly apply resonance, are all dependent upon the understanding and practical application of these factors.

The effect of interferences which account for stridency, harshness and weaknesses which so frequently are in evidence in various parts of the voice (even among those who are accounted good singers) must first be recognized by the ear, and intelligent constructive measures must then be taken to remove these interferences. It is only by this means that vocal faults are to be overcome, and comfortable easy delivery of song accom-

plished without sacrificing in any way the impressive delivery of the message.

It must be understood that there are two kinds of interferences to be overcome. First—interference with the vibrator (the true vocal cords) and second, interferences with the resonator (the pharynx—upper and lower—and the mouth).

Interference with the vibrator comes from the contraction of the muscles which govern the false cords and the swallowing muscles—chiefly the hyoglossis muscle at the base of the tongue (the hyoglossis is the first swallowing muscle to act). The swallowing muscles should be quiescent during voice production.

Interference with the resonator comes from undue contraction of the soft palate resulting in the raising of the uvula, which cuts off more than half of the resonance.

The proper proportion of fundamental tone, overtones, and resonance may be cultivated in “piano” or quiet as well as “forte” singing.

It is the maintaining of the proper proportions in both “forte” and “piano” singing

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which determines the fitness of a radio singer to appear in person before an audience.

Every vowel sound which comes from the human throat is either a musical tone (fundamental and harmonic overtones) or a noise sound in which overtones predominate and enharmonic overtones appear, or a mixed sound—the combination depending upon the various kinds and degrees of interference.

Interference is generally accentuated in the unskillful application of power—the result of undue force, always traceable to the contraction of the swallowing muscles during phonation.

When the radio singer knows how to apply power he may become a concert singer. When the concert singer knows how to remove interference he may become a doubly successful radio singer.

Regarding the concert field nothing can permanently and altogether take the place of the individual proximity of the artist to his public. The demand for the personality—the human touch with all its attendant power and interest—will assert itself. The complaint of concert managers that the radio has

ruined the concert field will not long be heard.

Regarding the estimate of one's individual possibilities for professional success, the things for the prospective artist to consider are his voice, his musical talent and his fitness for this line of undertaking.

In general it is best not to burn the bridges too quickly. It must be known that the development of the vocal artist is necessarily long drawn out. It is a real patience and endurance test. The ocean liner under proper directions, may arrive at its destination in six days. The vocal mariner can scarcely get anywhere inside of six years, and then he has just commenced his journey to the possible heights. Like every other field of life activity, there is always room at the top, and it must be said regarding the vocal field that the bottom is unusually cluttered with vocal aspirants of greater or less attainment who are not fully prepared. The purpose of development of the voice and of singing ability however may be placed upon a somewhat different basis of consideration than that of the mere prosaic "get a living" immediately with the voice.

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During the possibly slow but sure preparation for great vocal accomplishment there may be the accompanying idea of the practical "get a living" temporarily in the business world. Given proper preparation, major results are more frequently obtained. This factor of thorough preparation should not be overlooked nor its value underestimated. We have been considering of course the attitude of those who expect eventually to become professional vocalists. Professionals have always been recruited largely from the ranks of semi-professional singers. But there remains for consideration the interests of the would-be singer, endowed by nature with a vocal mechanism somewhat above the average, whose predilection to song is manifest in the urge to sing. To such I say learn to sing well for the personal gratification it will bring, follow up singing as an avocation—satisfy the longings of your heart to express in song artistically and well.

It will augment the sum total of your usefulness to society. The advice and help you receive from organists, pianists, accompanists, and coaches will have their musical

value, but the safest and best plan is to commence at once to develop your vocal technique. This can best be done by association with a voice-specialist who not only can sing, but who can demonstrate good vocal technique throughout the scale. Coaches who are not singers may aid in the superstructure as pertaining to repertoire, but are frequently not fitted for the work of properly developing the voice. Through the guidance of a real master of voice-culture the singer will be more likely to secure the essential requirements of a successful singer.

The problems which confront the average vocal student and which demand solution are such as might well intimidate the most courageous and optimistic of wayfarers in their sojourn on this terrestrial footstool, but fortunately, or unfortunately, as the case may be, the average vocal student does not realize this fact—at first he is not usually aware of the magnitude of the task before him—that is, assuming that he contemplates entering upon the career of a professional singer.

The reason for this is not at once apparent. The youthful candidate for Apollonian

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honors in the exuberance of his spirits and his enthusiasim over the prospects of conquering the world through the medium of song, wots not of the perils of the journey. He has a voice of quality, great range. Nature has endowed him with musical talent, everybody likes to hear him sing and applauds vigorously whenever he sings for the benefit of the ladies' aid society or at the local club. He has a much better voice than the widely advertised artist who appeared last week at the town theater.

His friends advise him to study for the career of a public singer; so, after some time given to a consideration of the pros and cons of the matter, he decides that inasmuch as medicine, law, or theology require so much time for preparation and inasmuch as a business career does not appeal to him, he will indeed become a singer. The die is cast; from henceforth he is wedded to his art and his troubles begin. But, figuratively, shortly after the honeymoon he finds that he is not absolved from attendant matrimonial difficulties albeit of a different nature than those which attend the presumable union of souls. These artistic matrimonial difficulties are

innumerable and complications are continually arising; for art is a jealous mistress—she smiles and bestows favors only upon those who forsake all else for her. Constancy is the main requirement for domestic peace and happiness in the domicile erected for the abode of man or woman and art.

But over and above all consideration of adjustment to environment which is the common necessity of humanity in all of the relations of life, the peculiar difficulty which presents itself to singers at the very outset is the preparation of the vocal organ to withstand the strain of constant public use and to retain the healthful vigor so necessary to adequate beauty and power.

The human vocal mechanism is unique among musical instruments. In its training there is no counterpart in the training of the fingers of the pianist, or the arm and wrist of the violinist—these are all observable and in practice the sense of sight is employed as well as the sense of hearing and feeling—and the instrument is presumably always in order. Hence the added responsibilities and difficulties of the singer, especially during the training period. The world-wide univer-

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sal principles of all the other instrumentalists are pretty well established and observed, and thus healthy and efficient action is comparatively safeguarded. The highways and byways of error are more easily recognized and avoided—and consequently the facts and fancies attending artistic excellence are more easily and harmoniously coördinated.

The vocal mechanism must be properly trained to be of reliable service. This fact has always been recognized and it is precisely here that the most serious difficulties are encountered. The great stumbling block is the acquiring of adequate vocal technique.

CHAPTER III

SOME CAUSES OF THE ETERNAL VOCAL CONTROVERSY

WHEN any great question arises for consideration and the resultant problems require a definite solution in the interest of truth, we find, as is to be expected, great divergence of views and opinions among those who are interested.

For a period of more than two centuries, individuals of all types have presented their views to an inquiring world as to a correct solution of important problems concerning voice, voice-culture and the art of singing. Some of these have contributed valuable ideas as to methods of training the voice, and others as to the interpretation of important contributions to song literature.

Disagreements have been inevitable as a matter of course, but in the consideration of voice-culture we find the greatest confusion as to the means of acquiring a vocal technique which is at once comprehensive, effective and desirable.

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The greatest source of this failure to agree, we may attribute in the first place to a lack of adequate knowledge of the general requirements as a whole, and in the second place to the lack of understanding of the relation of the parts to the whole.

When we deal with a subject of such infinite complexity we must take into consideration the influence of mind upon matter, and this involves a comprehensive understanding of the nature of voice and the vocal mechanism.

To the lack of such understanding we may fairly attribute the vast uncertainty and unsatisfactory results which have marked the progress of voice-culture up to the present time.

ANALYSIS NOT SUFFICIENT

Beginning with the first effort on the part of scientists to solve the vocal problems, we find that there was a persistent attempt to base their hypothesis upon the assumption that the analysis of vocal mechanism would in itself be sufficient to guarantee a logical solution of all questions pertaining to the use of the vocal organ.

It was assumed that once we knew about the structure of the vocal mechanism involving a knowledge of anatomy, and about the functioning of the vocal mechanism involving a knowledge of physiology, the scientific knowledge concerning voice was complete.

The science of physics or acoustics had little or no consideration among the early investigators. Following their investigations and for a long time there was a determined effort on the part of vocal teachers who subscribed to the findings of scientists regarding the physiological phase of this question, to base their activities upon the assumption that knowledge of the physiology of the voice was all sufficient—the muscular system must be trained to *compel* the vocal phenomena, according to their theories.

The failure of all schools thus founded is a matter of history. The physiological schools as a matter of sequence followed the empirical schools, the school of the golden age of song—which is explained in my work "The Lost Vocal Art." The decadence of vocal art was concurrent with the advance of the physiological schools which emphasize in no uncertain manner that "a little knowledge

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is a dangerous thing"; for an art without a comprehensive scientific background is in constant danger of disintegration. Hence the lost vocal art.

The first step which marked a distinct improvement in the art of tone-production was the consideration of the science of acoustics. With a better understanding of the influence of this science upon vocal art there was an upward movement of real importance.

Psychological considerations which are tempered by a knowledge of the exact sciences become far more reliable in the field of voice-culture and with such a background of established facts the renaissance of vocal art may reasonably be expected, as the consequence of intelligent adjustments. Knowledge of the relation of psychology to the exact sciences as influencing the activities of singing will bring it about.

In broad conception we may aptly apply Herbert Spencer's definition of life to the art of singing— "Life is the continuous adjustment of internal relations to external relations." All combinations, however, are not adjustments; the whole force and meaning of the word consists in its reference to

intentional arrangement. No combination can properly be called an adjustment if it be purely accidental.

TERMINOLOGY OFFERS PITFALLS

Another real cause of the deplorable confusion in the minds of the student body—and the teachers as well—is to be found in the present-day terminology, or the use of terms to express our meaning. Sometimes students are not at all sure that they comprehend their subjects as presented to them, and as a matter of fact they frequently do not.

We are attempting to present certain established facts in such a manner as to make them understand more clearly some of the things which they have heard about, but which for lack of this very understanding leave them in more or less of a quandary.

Very often things are said concerning voice and voice production which in the absence of definite knowledge of related facts do not register in their minds in such a manner as to be of much service in solving their vocal problems.

The chief cause of so much misunderstanding-

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ing lies in the fact that the terms which are used in vocal studios are so frequently void of any precise meaning. In fact it is not the purpose or intention of the teacher in many instances even to try to explain the phenomena of voice.

Many teachers frankly avow that they do not know anything about this part of the subject and furthermore assert that they consider it not only unnecessary but positively undesirable to talk about the physical side of voice production to students who are trying to learn to sing.

This is largely due to the fact that they do not know which parts should and which parts should not be under direct control. Knowledge of anatomy (the structure), physiology (the functioning) and acoustics (the laws which govern the action) is not in itself sufficient. The working knowledge of the psychological influences is also necessary, and above all the correlation of the whole; coördination is the keynote.

A solution of the problem of correct terminology, however, is entirely possible and that solution depends upon the classification

of ideas as presented to the student. If empirical instruction is used it should be so explained.

The sciences of anatomy, physiology and acoustics demand accurate terminology. The terminology which refers to flights of fancy or imagination can never be standardized and such terminology, it must be conceded, is inevitable; and not only inevitable but sometimes actually desirable when used with discretion. The confusion which has resulted from lack of understanding exists because of the absence of clean-cut differentiation in the classification of ideas presented.

The prerogative of the singer is the use of the imagination, disciplined or undisciplined. He always has and he always will use it; but if the imagination is disciplined to conform to facts the artist is surely on safer ground. Soaring flights of fancy are the natural consequence of feeling and emotion coupled with vivid imagination, and it is problematical how far they should be curtailed. It is essentially a matter of individual perception, conception and expression, but the mind must be trained to appreciate the

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value of exact knowledge as well as the proper use of imagination.

TWO KINDS OF INSTRUCTION

Great singers are born and then made. You can never make great singers when natural talent is lacking. You can only make imitations. But returning to the consideration of our problem—We may classify all instruction under two headings—scientific, referring to physical facts involved; and empirical, referring to every thing of a conjectural or imaginative nature. Empirical instruction is essentially from imagination—which is boundless. Instruction from analogy is frequently used and comes under the head of imagination. From every rational or scientific standpoint a great deal of such known instruction may appear the acme of absurdity, but it may nevertheless sometimes be useful. It all depends upon whether or no it actually produces good results.

The important thing is a perfect understanding as to which field is being ploughed. Pascal says the heart has reasons of its own which the head can never understand, and

there is a world of wisdom in this observation.

We must know that there are two kinds of thought-growth, first in the subconscious mind and second in the conscious mind—the subjective and the objective—feelings and facts result from these mind activities and growth. We have the heart and the head, as representing the subconscious and the conscious mind.

The difficulty with the correct operation of these two thought-centers is self-consciousness in its various forms. When this is removed and spontaneous action is allowed—always from the subconscious mind—the development of feeling occurs, then natural expression is forthcoming and consistent progress is made possible by the supervision of the conscious mind.

Here is food for reflection. Let us remember that before the scientific analysis of voice was ever undertaken there existed an art of beautiful singing, but that art was lost. It was not scientifically stabilized. This was during what is frequently referred to as "The Golden Age of Song." Could any term be more fanciful?

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THE GOLDEN AGE OF SONG

If you tell a physical scientist about the Golden Age of Song he will laugh at you and ask you where the gold mines were situated and what about the alloys. The scientists and the artistic or æsthetic idealists seem to have little common ground of understanding.

The singer doesn't always know exactly how he produces vocal effects—sometimes they spring spontaneously from feeling and emotion. In the practical field of voice-culture, however, we are brought face to face with very real problems which require solution. This has always been recognized—and whatever solution science can offer is welcomed by all serious-minded students, possessing the leavening attribute of common sense.

VOCAL METHODS

We know that the history of the vocal art teems with instances of success and failure accompanying the many kinds of endeavor more or less systematic, known as methods. Method is supposed to be a systematic means of acquiring something mentally and physically which will consistently produce desir-

able results; but experience has proved that any cut-and-dried vocal method does not fit all cases, and so we have come to realize that learning any particular method of voice production is more or less uncertain and frequently disastrous in effect.

The only methods that are at all tenable are flexible and variable methods, or those which meet the immediate requirements in overcoming individual defects. This brings us to the realization that methods which are not based upon sound principles are dangerous.

The cause of indifferent or positively unsuccessful results attending the training of certain students may be traced to one or both of two sources—one is the ineptitude or incompetence of the student himself—that is the lack of native musical talent or predisposition which under psycho-analysis might be shown to be due to unfavorable environment or heredity—and the other is the teaching of things which are not true. This second handicap may have been more or less successfully overcome by very talented students.

Truth more firmly and more universally established will make for a betterment of

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pedagogical and consequently of resultant general conditions.

As has been stated, what is generally understood as scientific voice-culture in the past has not always been truly scientific because scientific voice-culture includes positive knowledge of how to proceed to attain certain results. I have known of really effective voice-culture being practiced by many who disclaim any interest or belief in scientific voice-culture, but this is because they did not themselves know that they were really following a course of procedure which if properly classified might be labeled as meeting the essential scientific requirements. This condition, however, is not the most desirable—for the reason that wrong principles might easily be accepted if presented by any misguided person having an engaging personality with a plausible but an unsound argument.

Again, there have been those who have dwelt upon the importance of following Nature's way or natural voice production, and the like, who in their explanations of what this means as well as in their practical applications disclose that they are far from understanding the meaning of the term, at

least so far as it bears upon effective vocal training.

Truth, to be derived from authentic information as to the facts concerning voice production, is what is sorely needed at this time. It has been truly said that "Truth crushed to earth will rise again," but sometimes it takes a long time for it to do so. In the meanwhile the hopes of aspiring young vocalists are crushed or dampened by the successive failures which they constantly experience in the absence of available truth. They have unfortunately in many cases been led to consider falsities as truths, and as a consequence many a sad and sometimes tragic culmination from blasted hopes has resulted.

It has been said that the road of the truth-teller has always been rocky—Socrates sipping the hemlock, Stephen stoned, Bruno burned at the stake, Galileo frightened into disclaiming any knowledge of the truth which he first uttered and which he actually retracted in these words, "I, Galileo, being in my 70th year, being a prisoner and on my knees, having before my eyes the Holy Gospel which I touch with my hands abjure,

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curse, and detest the error and heresy of the movement of the earth."

"Something in human nature," says Merle Crowel, "makes us resent the impact of new ideas. We hate to be disturbed in the beliefs and prejudices that have been handed down with the family furniture. At maturity too many of us go into hibernation, and live off the fat of ancient fetishes. If a new idea invades our den we rise up snarling from our winter sleep." However this may be, we are constantly reminded by the march of affairs, that new ideas which are really constructive are being accepted—however, grudgingly—and progress is the rule of the Universe. There is inherent in the human breast a desire for improvement and for better conditions. Without any doubt, in spite of the ubiquitous flapper, the questionable state of prohibition, and the stress of the refractory ideas of the younger generation, this world is constantly growing wiser and withal, better—and the vocal world will continue to improve from a more perfect knowledge of the nature of voice.

CHAPTER IV

PHONETICS—THE SCIENCE OF SPEECH SOUNDS

IN ORDER to have a correct understanding of the vocal mechanism and of voice there are here presented the duly accredited findings of Dr. Floyd S. Muckey, which will serve as a stabilizing influence in arresting the seemingly unceasing flow of false ideas concerning voice with which our current literature is flooded.

PHONETICS IS THE SCIENCE OF SPEECH SOUNDS

I. It includes a study of the constitution of the sounds; the manner in which they are produced; their mode of transmission through the air; the structure and action of the organ of hearing; the process of transforming the air impulses (air waves) into nerve impulses; and finally those changes produced in the nerve centers, which we term sense-impressions of sound.

II. Speech sounds are produced by a mechanism (an apparatus) made up of animal tissues, such as bones, cartilages, muscles, and nerves. A study of the anatomy and physiology of these structures is

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therefore essential to a complete knowledge of the production of such sounds.

III. The speech mechanism (speech apparatus) is composed of the air-current mechanism, the larynx, and the cavities of the pharynx, mouth, and nose. The muscular structures surrounding these cavities enable us to change their size and shape, and thus, through resonance, to differentiate the various speech sounds.

IV. Speech sounds are called, distinctively, phones. These phones are the actual entities that are represented by the visible symbols called letters.

FUNDAMENTAL FACTORS

V. There are four fundamental factors in the production of speech sounds.

First: Vibrators.

Second: Air-current mechanisms.

Third: Resonance mechanisms.

Fourth: Pitch mechanisms.

VIBRATORS

VI. A vibrator is a portion of elastic matter, as a string, a plate, a mass of air, or a living tissue, which moves rapidly to and fro past its point of normal rest. As a vibrator moves towards one side, it forces the air particles before it closer together and produces a "phase of condensation." At the same time, the air particles behind the vibrator, being relieved of pressure, separate, and a "phase of rarefaction" is produced. This process is immediately reversed

when the vibrator swings back, and this action and reaction of pressure and release is continued in very rapid succession.

VII. One phase of condensation and one phase of rarefaction on the same side of a vibrator, constitute a complete air wave. We are concerned only with the air waves produced above the vocal cords as these air waves alone affect the auditory mechanism. We must distinguish clearly between an air current and an air wave. In an air wave, the air particles merely move to and fro from the phase of condensation to the phase of rarefaction, and *vice versa*. It is very different in the case of an air current; here, the particles of air are driven along and away from their original place.

VIII. The air pressure in the phase of condensation is much greater than in the phase of rarefaction. These varying conditions of pressure in the air are absolutely essential to the functioning of the auditory mechanism; that is, there could be no motion of the ear drum without these varying degrees of pressure in the air. To produce air waves, or the to and fro motion of the air particles, a vibrator must have great elasticity. A certain degree of resistance is necessary for the elastic element to function. This resistance may be inherent in the vibrator, as in the reed and the tuning fork; or it may be imparted to it by tension, as in the string and the vocal cords; or by an increase of density, as in the air blade.

IX. There are only two substances in the voice

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mechanism which have sufficient elasticity to act as vibrators. These are the vocal cords and air.

TONE VIBRATOR

X. The vocal cords are two bands or strings of yellow elastic tissue. The requisite resistance is imparted to them through tension. This tension is effected by the action of the vocal muscles upon the cartilages of the larynx. The vocal cords are virtually strings, as they are attached at both ends and are subject to tension. Therefore they segment in precisely the same manner as do strings when vibrating, and so the partial tones, fundamental tone and overtones, of the voice are identical in pitch with those of the string.

XI. The vocal cords lie horizontally across the larynx from front to back and are attached to the cartilages of the larynx. By the action of the vocal muscles on these cartilages the cords are tensed and brought close together.

XII. The vocal cords, (1) having a definite shape, (2) being attached in a definite way, and (3) segmenting in a definite manner, will produce, during their vibrations, air waves of regular sequence and definite lengths.

XIII. A characteristic of all vibrating strings, including the vocal cords, is that they vibrate in several different ways at the same time. They never have a simple pendular motion, like the pendulum of a clock. To be more specific, the vocal cords vibrate as a whole to produce the fundamental or pitch tone; in halves, to produce the first overtone (which

is always the octave) ; in thirds, to produce the second overtone ; in fourths to produce the third overtone ; and so on.

XIV. Helmholtz says, "Musical tones consist of a regular motion of the air, continuing uniformly, and in its turn excited by an equally regular motion of the sonorous body whose impulses are conducted to the ear by the air. The particles of the air must also execute periodically recurrent vibrations, in order to excite the sensation of musical tone in the ear. By periodic motion we mean one in which the air particles return to the same condition after exactly equal intervals of time."

XV. We have now established a physical basis for the term "Speech tone." These conditions are in accord with the definition of tone given by acousticians.

AIR VIBRATORS

XVI. An air vibrator, or an "air blade," is a relatively dense and rigid portion of air, made so by forcing a current of air through a constricted opening. The air vibrator is always beyond the constriction through which the air current is forced. The air blade is indefinite and irregular in shape, and of course, without any attachments. Its manner of vibrating is constantly changing in an irregular way, both as to its shape and as to its segmentation ; consequently an air vibrator starts a great number of wave lengths at the same time. The pitch of the sound which we hear, when started by an air vibra-

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tor, is determined by the size and shape of the resonance cavities which amplify it.

XVII. The sounds produced by flue organ pipes, flutes, whistles and the like, are originated by air vibrators. In such instruments there is a great variety of wave lengths started by the vibrator, but only one wave length is amplified at any given time by the cavity of the pipe, and therefore this is the only one we hear. The others are too weak to have any perceptible effect upon the auditory mechanism. The pitch of the sounds produced by such instruments is determined by the size of the pipe, while the pitch of the sounds produced by stringed instruments, including the vocal cord mechanism, is determined by the length, weight and tension of the vibrator. The pitch of the sounds produced by the vocal mechanism, when the sounds are "noise," and not "tone," is likewise determined by the size and shape of the "pipe" concerned, that is, the resonance cavities.

XVIII. In the speech sounds originated by an air vibrator there are a number of air waves of very nearly the same length amplified by the resonance cavities at the same time. This is because of the complexity of shape of these cavities. Such a combination of air waves is termed "noise" by acousticians; for example the sounds represented by the letters *s*, *t*, *h*, *k*, and *f*, are noise sounds.

XIX. The air vibrators which originate these sounds are located in various parts of the voice mechanism. In the *h* sound the air vibrator is located just above the ventricular bands, or "false cords";

that for *k* just in front of the soft palate; that for *s* and *t* at the front of the lips. It is easy to understand that because of the varying positions of the vibrator, there will be a different resonance for each sound. This results in a different combination of air waves, capable of being differentiated by the auditory mechanism.

XX. It will thus be seen that resonance is the factor which enables us to differentiate the noise sounds, and that this differentiation in turn depends upon the size and shape of the resonance cavities. We therefore have a large class of speech sounds which are termed "noise" sounds.

XXI. The line of demarcation between "tone" and "noise" sounds is clear and distinct, both as to their constitution and as to their manner of production. Helmholtz writes, "the irregularly alternating sensation of the ear in the case of noises, leads us to conclude that for these the vibration of the air must also change irregularly." The changes in the air must follow those of the vibrator; hence the motion of the latter must be an irregular one.

MIXED SOUNDS

XXII. It is possible to actuate both the vocal cords and the air blade at the same time. This action will result in a combination of tone and noise sounds, which may appropriately be termed "mixed." Under such circumstances neither vibrator will act as efficiently as though it were acting alone. The vocal cords cannot be closely approximated, for if they

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were, sufficient air would not escape to actuate the air blade. On the other hand, with the glottis, or the opening between the vocal cords, partially closed, as in the mixed sounds, sufficient air cannot pass through to form properly the air blade. For these reasons mixed sounds will not have the volume and the carrying power of either tone or noise sounds when produced separately.

CLASSIFICATION

We therefore have three great divisions of speech sounds, namely:

XXIII. 1st. Tone sounds, in which the vocal cords act as the vibrator. These have a regular definite motion which is periodic in character. The resulting air waves are regular and periodic and produce definite pitches.

XXIV. 2nd. Noise sounds, in which the air blade acts as the vibrator. The size and shape of the air vibrator are irregular and indefinite. Its motion is constantly changing, and therefore is also irregular and indefinite. The resulting air waves must consequently be non-periodic and with no definite pitch relationship.

XXV. 3rd. Mixed sounds, in which both vibrators are active. In this case neither vibrator can act as efficiently as it would when acting alone. We therefore have a modified tone sound and a modified noise sound, traveling through the air together. The constitution of the mixed sounds consequently differs from that of either of the foregoing classes,

and the sensations produced by these different classes are readily distinguished from each other.

XXVI. Every speech sound uttered by the voice mechanism can be placed under one of these three classes. For this reason our classification is complete. It is also in accord with the accepted definitions of classification. It will be noted that we have made our classification in accordance with the constitution of the sounds themselves, and this is still further elucidated by a statement of the manner in which they are produced. The terms "tone sounds," "noise sounds," and "mixed sounds," applied to the classes of speech sounds, are used in a specific and restricted sense.

* * * * *

AIR-CURRENT MECHANISMS

XXXI. The vibrators are set in action by air currents. In the production of such air currents two mechanisms are required:

1st. The breath mechanism

2nd. The vacuum-producing mechanism.

XXXII. Breath is defined as "the air inhaled and exhaled in respiration." Breath is, therefore, an air current. Speech sounds may be produced when the air current is passing in or out of the lungs. Ordinarily speech sounds are produced by the outgoing current. However, with a little training, speech sounds may be produced almost as well with the ingoing as with the outgoing current. This is especially true in singing, where articulation is usually less frequent than in speech.

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BREATH MECHANISM

XXXIII. The breath mechanism consists of the lungs and the air passages leading to them, the chest walls and the muscles which move them, and the diaphragm. The chief muscles of inspiration are the external intercostal muscles and the diaphragm. The external intercostal muscles contract and thereby raise and evert the ribs. This action increases the transverse and antero-posterior diameters of the chest cavity. The contraction of the muscular fibers of the diaphragm lowers it and thus increases the vertical diameter of the chest cavity. The air flows into the lungs to fill the partial vacuum thus formed, and the act of inspiration is complete. Ordinary expiration involves no muscular contraction.

XXXIV. In ordinary breathing, the contraction of the external intercostal muscles and of the diaphragm during inspiration, stretches the tissues of the chest walls and of the lungs, and thus energy is stored in them. When the inspiratory muscles are relaxed, the elasticity of the chest walls and of the lung substance comes into effect and the air is forced out of the lungs. The contraction of the inspiratory muscles is the motive power of inspiration, while the elasticity of the chest walls and of the lung substance furnishes the motive power for ordinary expiration.

XXXV. In the production of speech sounds the inspiratory muscles are relaxed gradually, so that the air is forced out of the lungs slowly, giving the appropriate degree of pressure for actuating the

vibrators. The relaxation and consequent raising of the diaphragm, the relaxation of the intercostal muscles, and the resulting collapse of the chest walls and lung substance, compress the air in the lungs, and thereby produce the outgoing air current for setting the vibrators in motion. This setting of the vibrators in motion is the sole function of the breath in speech production. Breath or the air current bear the same relation to the vibrator that the belt which conveys the power from the motor does to the machine which it operates. Breath, or the air current is not the motive power of the voice mechanism, but is the agent which conveys the energy from the motor to the vibrator.

VACUUM-PRODUCING MECHANISM

XXXVI. The vacuum-producing mechanism is formed by the tongue and the hard palate. The tongue is forced against the palate so as to press the air from between the two. Then by a contraction of the lingualis muscle, a cavity is formed by hollowing some portion of surface of the tongue, without releasing its edges. When the edges are suddenly released the air rushes in to fill the vacuum, and an air current is produced. This current produces an air vibrator, and air waves are set up. The sounds of the voice called "clicks" are produced in this manner.

The fact that speech sounds may be produced by the ingoing air current, completely disproves the "puff theory," as advocated by some prominent writers, as well as the common notion that speech sounds are breath. It also shows

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that air waves travel practically as well against a slow-going air current as they do with it. If air waves can thus travel in a direction opposite to that of the air current, they certainly cannot be identical with the air current. According to the accepted definitions of breath and sound, the term breath-sound is self-contradictory. The fact that a particle of air cannot be "driven along and away from its original place" and at the same time "return to the same condition after exactly equal intervals of time," makes the "breath-sound" an absurd and impossible conception. Moreover, if air particles could be driven along and away from their original place at the speed at which speech sounds travel, they would become a terrifically destructive force. But speech sounds are harmless.

RESONANCE MECHANISM

XXXVII. Resonance is the reflection of the phases of condensation of many air waves, in such a manner that they are brought together or concentrated near, and within, the restricted outlet of a cavity. The result is a great amplification of the sound. The particular kind of reflection mentioned above requires a peculiar shape of the cavity. Such a cavity is called a resonance cavity.

XXXVIII. There are two ways of amplifying sound waves:

1st. By the process of resonance

2nd. By the process of sympathetic vibration.

XXXIX. Resonance and sympathetic vibration are quite different as to their nature, and as to their method of application. These differences may be described as follows:

XL. The process of resonance may involve but one vibrator. The resonance cavity takes the phases

of condensation of many air waves, as they come from the vibrator, one at a time, reflects them from different points inside the cavity, until many of these phases of condensation have been brought together within the cavity, and near the restricted outlet, and then discharges them through the outlet as one amplified air wave. It is possible to amplify sound by this process of resonance, so that it will carry two or three hundred times as far.

SYMPATHETIC VIBRATION

XLI. In contrast with the process of resonance the process of sympathetic vibration involves two or more vibrators, namely:—

A primary vibrator, and one or more secondary or sympathetic vibrators.

XLII. The construction of the present piano affords a good illustration of sympathetic vibration. The string or primary vibrator is set into motion by the stroke of the hammer. Vibrations of the primary vibrator are conducted to the secondary vibrator, namely: the sounding board, through the bridge upon which the string rests, which bridge in turn rests upon the sounding board. The vibrations from the string cause the sounding board, or secondary vibrator, to divide into segments, each of which constitutes practically a separate vibrator, and each of which starts a phase of condensation at the same time. These phases of condensation travel through the air together and hence form one amplified air wave. The result is the same as in the process of resonance—an amplified air wave.

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XLIII. Though the result is the same the processes are different. These differences may be stated as follows:

1st. Resonance may involve but a single vibrator, while sympathetic vibration involves two or more vibrators.

2nd. Resonance requires reflection, but there is no reflection in sympathetic vibration.

3rd. In resonance the phases of condensation are started singly, at consecutive periods of time. In sympathetic vibration all the phases of condensation are started at the same time.

4th. Resonance involves a vibrator in close proximity to the mouth of a cavity, the cavity acting as the amplifier or resonator, while sympathetic vibration involves primary and secondary vibrators, the secondary vibrators acting as the amplifiers.

5th. A resonance cavity cannot originate air waves as it has no secondary vibrator. The secondary vibrators in sympathetic vibration originate air waves, and there would be no amplification without these secondary vibrators.

6th. Resonance is the means of amplifying sound in voice production, while sympathetic vibration is a factor in the perception of sound by the auditory mechanism.

XLIV. An echo is due to a single reflection, and instead of an amplification there is a decrease in the intensity of the sound.

A reverberation is a series of echoes following each other in rapid succession.

XLV. The most favorable shape of a resonance cavity is when its body is large in comparison to the size of its narrowed portion, which ends in a restricted outlet; and when, the boundaries of the cavity being curved, the walls gradually converge as they approach the restricted outlet.

XLVI. The resonance mechanisms of speech production are formed by the cavities of the pharynx, of the mouth, and of the nose. In the production of speech sounds these cavities should be used to the fullest extent appropriate to the case. In the hum, only the cavities of the pharynx and of the nose are used for resonance purposes.

XLVII. Concentration of the air waves inside a cavity near the outlet is the essential factor of resonance. In the voice mechanism this concentration can best be attained when there is the largest possible space in the pharynx, upper and lower. This condition requires the low and forward position of the soft palate and the high and forward position of the back of the tongue. This is the position of rest of these structures. The soft palate and the back of the tongue take no active part in the amplification of speech sounds. They merely form a part of the boundaries of the resonance cavities. When the above described condition obtains, the air waves started by the vocal cords are concentrated near the restricted outlets of the mouth and nose, and are discharged into the outside air before this concentration is broken up.

XLVIII. Speech of necessity consists of a se-

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quence of changing sounds, and these changes are produced by changes of resonance. For this reason, in the production of speech sounds, resonance is a vital factor. There could be no science of phonetics without resonance. It is therefore necessary that the conditions essential for its proper application should be thoroughly understood. It is possible to produce the tone sound *a* (as in father), and the noise sound, *ha*, whispered, without changing the resonance; or we could do the same with *e* and whispered *he*, and so on through all tone sounds. However, a change from *ah* to *ee*, or any change from one tone sound to another, or any change from a tone sound to a noise sound, with the exception of the one noted above, requires a resonance change. It is therefore impossible to produce more than two speech sounds without resonance changes.

XLIX. Resonance changes are produced mainly by changing the position of the front of the tongue and the position of the lips. This can be effected without the contraction of the muscles of the soft palate.

L. An important fact in connection with the resonance of the voice mechanism is that the action of the resonance cavities is much more effective, in tone production, when a particular combination of partial tones is projected into them. This particular combination of partial tones is found when the fundamental and the lower overtones are predominant, and the higher overtones are subordinated. In the tone sounds the above named combination results

when there is a free and unhampered swing of the vocal cords.

LI. The free and unhampered swing of the vocal cords can only take place when the ventricular bands (false cords), which lie directly above the true cords, are widely separated. This is the position of rest of the ventricular bands, whose chief function is to prevent particles of food, liquid and solid, from dropping into the larynx during the act of swallowing.

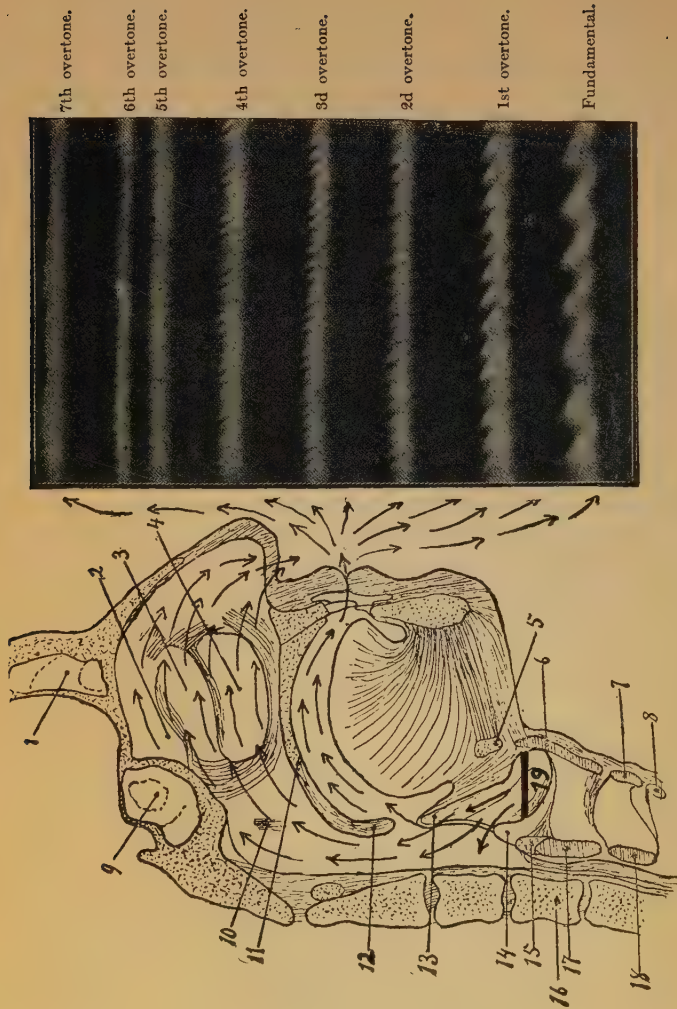
For the above reasons the proper use of resonance demands the relaxation of the muscles of the back of the tongue (hyo-glossi), the muscles of the soft palate, and the muscles of the ventricular bands. The principal function of these structures is in the act of swallowing, and they should remain quiescent during tone production.

* * * * *

SWALLOWING AND SPEECH PRODUCTION

LIII. It is easily understood, therefore that the throat structures have two important functions to perform, namely: the act of voice production and the act of swallowing. It is also clear that these two acts are antagonistic, the one to the other. During tone production any contraction of the muscles of swallowing is an interference.

LIV. Another important fact to bear in mind is that in swallowing, the muscles of the back of the tongue are the first to act, and the contraction of the muscles of the soft palate and of the ventricular bands follows. It is evident then, that if the muscles



The arrows indicate the path taken by the air waves.

FIG. 12. Vertical section of the head to show location and relative size of the resonance cavities.

1. Frontal sinus. 2, 3, and 4. Turbinate bones. 5. Hyoid bone. 6. Thyroid cartilage. 7 and 18. Top ring of the trachea. 9. Sphenoidal sinus. 10. Epi-pharynx. 11. Hard palate. 12. Soft palate. 13. Epiglottis. 14. Arytenoid cartilage. 15. Arytenoid muscle. 16. Vertebra. 17. Cricoid cartilage. 19. Vocal cords.

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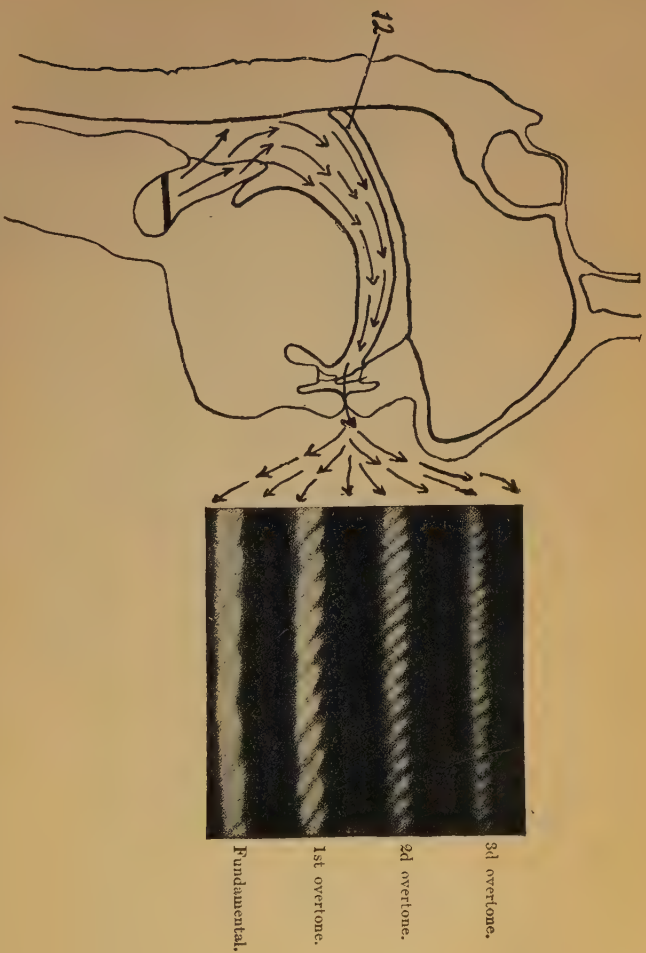


Fig. 13. Vertical section of the head, similar to Fig. 12, but showing how the raising of the soft palate (12) and closing of the passage diminish the space available for resonant re-enforcement by cutting off the large cavity of the upper pharynx and nose.

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of the back of the tongue remain passive, the others will not contract. Correct resonance in voice production requires the relaxation of the muscles of the back of the tongue (hyo-glossi). The latter muscles are attached indirectly to the pitch mechanism, and any contraction of them interferes with the correct action of the pitch mechanism. The conclusion is that if the muscles of the back of the tongue remain passive, there can be no interference in the production of changes of volume, quality and pitch in speech sounds.

The following chart by Hallock & Muckey presents a plan for orderly consideration of voice as to theory.

PHYSICS OF VOICE

- I. Definition—Voice is air waves.
- II. Analysis—Separation of voice into its elements or partial tones.
- III. Classification of Facts
 1. Pitch—Length of air waves.
 2. Volume—"Height" of air waves.
 3. Intensity—Application of resonance to fundamental and partial tones.
 4. Quality = number and relative intensities of partial tones.
- IV. Causes of Classes of Facts
 1. Pitch = length, weight and tension of vocal cords.

2. Volume = (a) Extent of swing of cords.
(b) Resonance.
3. Quality = (a) Vibration of vocal cords
as a whole and in segments.
(b) Resonance.

V. Relationship of Classes of Facts

Length, weight and tension of the vocal cords must be such as to give the widest swing for volume and the most favorable segmentation for quality. The combination of air waves thus stated being most favorable for the effective application of resonance.

VI. The Natural Law

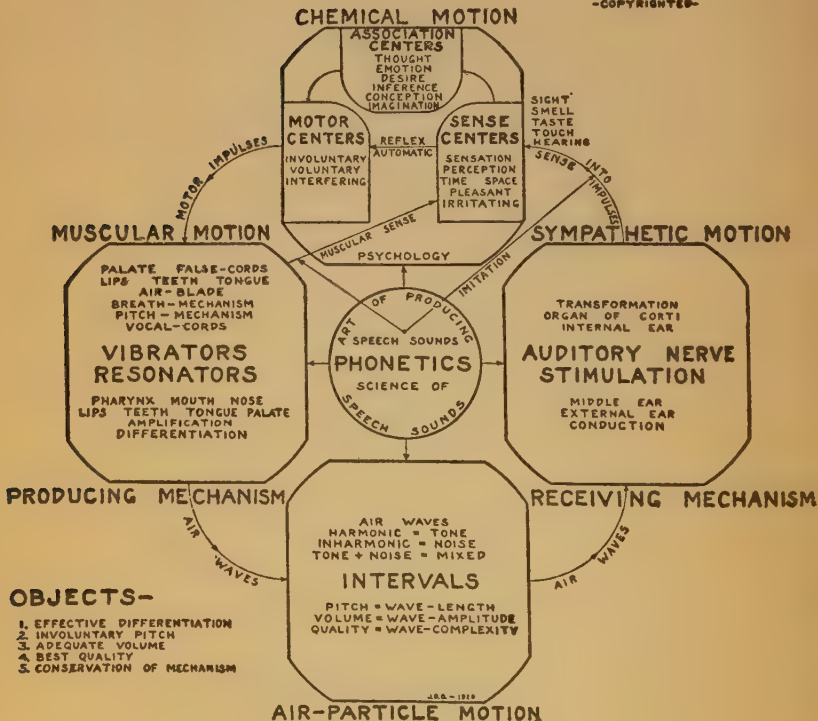
Non-interference with the action of the vocal cords and the full use of resonance.

Representing Standardized Tone

Voice production without interference and with full use of resonance automatically eliminates the seeming necessity of breath control, automatically economizing the use of the breath.

DEFINITION	ANALYSIS	CLASSIFICATION
ESSENTIAL	FACTORS	
DESCRIPTIVE	TERMS	

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CHAPTER V

VISUAL CORROBORATION OF FACTS

RECENT disclosures of hitherto hidden truths concerning the human voice which are likely to give an entirely new slant to present-day views regarding voice-culture are at hand. The proof of the verity of certain important facts relating to the mechanism during phonation is due to the skillful use of a specially contrived laryngoscope.

This instrument differs from the ordinary laryngoscope in general use in that it permits two persons to view at the same time from opposite ends of a tube, not only the interior of the larynx in repose, but the inner workings of the tone-producing mechanism of the voice during phonation. It permits the observation of the activities of all the adjacent muscular tissue, so that one is able to get a correct understanding of the relation of the false cords to the true vocal cords in tone production.

By direct observation the false cords are

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seen to be the chief cause of interference with the initial part of voice production.

This new laryngoscope makes it possible not only to observe the vocal action in connection with single tones but also during the uninterrupted singing of a scale of over two octaves.

The operator inserts the electric bulb in the throat and, looking down the tube, is enabled to see just what is taking place in the larynx and how the interior looks when all the muscles and adjacent cartilages are quiescent as well as during vocal activity, and what is still more wonderful, to detect to the minutest detail all favorable as well as unfavorable muscular movements during tone production. By inverting the instrument in the throat, it is also possible to note the otherwise hidden parts of the posterior and upper regions of the throat above the soft palate; also to observe the muscles which govern the size and shape of the opening to the nasal cavity, as well as the interior—the most important factor of the resonance mechanism.

This is the first instrument to be shown which affords the opportunity of thorough

examination of the larynx and likewise of the upper and lower pharynx, including their relations to each other in voice production. The operator demonstrates over two octaves of voice in a series and at will produces the incorrect sounds which immediately show false cord interference. We can also see here the cause of the limited range of voice. Observation of cause and hearing the effect of the various vocal activities are practically of simultaneous occurrence.

The skillful use of the instrument corroborates all correct theories concerning laryngeal performances during tone production and likewise disproves and sets at naught many and various incorrect conjectural theories which have from time to time been presented by investigators in the past.

It has established beyond a peradventure many facts the knowledge of which is so necessary to a proper understanding of what is required in voice development.

It has established the fact that the hyoglossis muscle and the false cords not only perform their normal function during the act of swallowing, but appear as a constant and persistent agent representing interfer-

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ence with the beautiful harmonious sounds, which are in evidence when they are in their normal state of quiescence during tone production.

The intrinsic and the extrinsic muscles are plainly seen to function involuntarily and voluntarily according to the nature of their respective muscular systems. The knowledge of the all important and most significant fact that the tone-producing mechanism is involuntary in its action—and never can be otherwise—will be welcomed by all vocal investigators as at least a partial deliverance from false conjectural theories which have arisen from the imagination of so many votaries of the beautiful art of singing.

It would seem that these observations will be fruitful in creating an entirely new line of thought and action respecting the future training of the human voice in song and speech. All fanciful theories built upon guesswork will naturally disappear in the light of incontrovertible facts.

One of the most interesting things to be observed is the physical phenomenon of the pitch-changing mechanism in the larynx. The involuntary lengthening and shortening

of the vibrating length of the cords according to pitch desired is conclusive proof of the fact that pitch changes are at the vocal cords and that there are no such things as registers.

The autolaryngoscope is a most difficult instrument to use effectively. Many who have attempted its use have been unable to obtain satisfactory results on account of the repellent nature of the sensitive nerves and muscles of the throat.

The remarkable demonstrations however of Miss Syrene Lister at Teachers College, Columbia University, Cornell Medical College, N. Y., the Eastern Speech Conference at Hunter College, N. Y., the University of Vermont, the New York Singing Teachers' Association at Steinway Hall, N. Y., have shown clearly the functioning of the vocal organ during phonation—both with and without interference—over ascending and descending scales of between two and three octaves in range.

These demonstrations have also been given under the direct observation of many scientists, clergymen, editors, and a number of distinguished artists.

Needless to say, such evidence of facts as touching the activities of the tone-producing mechanism and adjacent cartilages is of outstanding value in correcting highly erroneous ideas concerning the mechanism of the human voice and its functioning. It is of particular interest to note that the pitch-changing mechanism in the larynx under observation is seen to be identical with all stringed instruments, i.e. the lengthening

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and shortening of the vibratory length of the vocal cords according to the pitch desired. This involuntary action of the cords to meet the normal requirements shows conclusively that there is no ground for the Register theory of the vocal mechanism in action.

The fundamental tone is demonstrated throughout the scale.

CHAPTER VI

THE NATURE OF VOICE

JOHN STUART MILL has perhaps given the best definition of this much talked-of and so little understood thing called "Nature." He says, "Nature is the sum of all phenomena, including not only all that happens but all that is capable of happening. The unused capabilities of causes are as much a part of the idea 'Nature' as those which take effect." There should be recognition of the fact that speech or song should be spontaneous, and thus is far more effective in expressing thoughts and emotions than when it comes forth with artificially contrived fixation in delivery—intended to impress the hearer with the idea that the message is being delivered in an artistic manner. This represents artificiality in art.

The failure of singers to understand that a wrong interpretation of the laws of nature as pertaining to voice production has been a big stumbling block in their pathway.

There is a world of wisdom in the old

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Italian saying "L'Italiano non ha gola"—The Italian has no throat. What a subtle problem in psychology! To deny the very existence of a throat is to preclude and to make impossible the use of the throat so far as the will of the singer is concerned. Those old masters knew from experience the very things of such fundamental importance to singers which have since become proven facts of science.

True, they did not know that there is no such thing as a pure tone as applied to vowel sounds. They did not know that the construction of vowel sounds is necessarily complex, neither did they know that the analysis of vowel sounds shows them to contain not only fundamental tone but overtones—that is, vibrations of the segments of the cords—which shows the scientific unfitness of the term "pure." The nearest approach to "pure tone" is found in the properly produced hum.

Neither did the old Italians know that there is a great difference between resonance and sympathetic vibrations. They did not know the nature of resonance.

Perhaps they knew better than to try to form their vowels with the epiglottis, which

cartilage represents only a factor in the functional activity of the throat in swallowing. Epiglottis activity during tone production means interference of the worst kind, but they did know that they must not willfully sing with the throat. They did not know this from any understanding of the nature of voice but from experience in hearing and feeling.

Scientific knowledge has since made clear the why and wherefore of the matter, and explains the cause of the dreaded interference.

Interference with the natural functioning of the vocal mechanism is chiefly of three kinds, brought about by three sets of muscles, i.e., false cords, soft palate, and the back of the tongue. The first form of interference affects the true vocal cords in the generating of tone by preventing free vibration; the second affects the application of resonance, and the third interferes with both resonance and pitch changes.

Regarding false cord interference, we know that the false cords are swallowing muscles and function as such. They are not concerned in tone production, and there is no

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likelihood that any new feature of the activities of the false cords as helping voice production can be demonstrated. The false cords do not contain the elemental possibility of producing tone, as they are not composed of elastic tissue and cannot be stretched to produce tone. Their influence is always destructive, so far as harmonious tone is concerned.

Regarding the soft palate, we understand that when this is raised or stiffened it interferes with production by cutting off a large part of the resonance space.

The epiglottis is not in any way a constructive agent in voice production. In normal action it is pulled down over the true and false cords by muscles connected with the arytenoid cartilages in the act of swallowing; the pulling down of the back of the tongue will make it incline toward the horizontal position which it assumes in the act of swallowing, and so far as it does this it acts as an added interference, a menace to free passage of the air waves or voice.

The contraction of the hyoglossis muscle is a powerful agent in hindering the action of the pitch-changing muscles of the larynx.

It is, therefore, the usual cause of faulty intonation—singing out of tune. It has no place in voice production other than as an interfering agent. These are some of the things about voice and the vocal mechanism which are discussed with more or less knowledge of the subject—generally less—by many who are not acquainted with the physical facts of voice production and who are therefore not sound in their theories.

Strictly speaking the only thing that can be standardized in voice production is that part which can be measured. The philosophy of voice is reflected in the sciences which are exact: anatomy (structure), physiology (functioning), physics, laws which govern, including acoustics, and in the less exact science of psychology, which cannot be measured accurately. Useful science begins in philosophy and ends in art.

Those who write about the science and art of voice production without definite knowledge are apt to indulge in meaningless modes of expression which only add to the general confusion and chaotic condition which now exists.

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SEPARATING FACTS FROM FANCIES

Analysis, definition and classification of facts are the prerequisites of any science, and the science of voice requires no less consideration. The difficulty, however, in the vocal world today lies not in the absence of exact knowledge available to all, but in the failure to understand and to recognize that there is already established the science of voice production.

The physical facts regarding voice production herein presented were scientifically established by Dr. Floyd Muckey and the late Prof. William Hallock of Columbia University, and they are on record at the Academy of Sciences of New York and Brooklyn and at the National Association for the Advancement of Science at Springfield, Mass.

There is a wide field for conjectural supposition and speculation represented by the eternal grandmother of art and mother of all sciences—Philosophy—as reflected in psychology and metaphysics which has to do with the expression of feeling and emotion—interpretation—and this can never be standardized unless we speak of a standard with reference to generally approved modes of

delivery of the literature of opera, oratorio and song. But still such standardization can never be absolute. Interpretation will always remain largely individual, but as to facts from the standpoint of the singer, or subjectively, voice is air waves produced by the involuntary action of the vocal mechanism in response to the natural law governing its movements—in which respect it may be considered, as the psychologist says, as the audible manifestation of the soul or spiritual being.

From the standpoint of the listener, or objectively, voice is the sensation of sound caused by air waves which strike the eardrum, thus producing sympathetic vibration.

WHAT IS VOICE?

To this question the philosopher or the psychologist will answer—voice is the audible manifestation of the soul by means of the vocal mechanism.

The scientist, coldly cynical, unpromisingly exact, will answer—voice is air waves.

The artist will answer according to his intellectual light and personal interest in the

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matter and may make the ready reply—voice is voice—and that's all there is to it. That's what I sing with. It may not have occurred to him that he might also say, "talk with."

Now one of the purposes of this writing is first to make plain that voice is physical and therefore measurable; secondly, that the normal functional activities of the vocal organ are precisely the same in kind, whether used in singing or speaking. To be sure, singing is different from speaking in so far as the greater includes the lesser; physically the difference is only in degree, not in kind. Objectively the chief difference is in the realization of sustained definite pitch of the tone sounds in singing as distinguished from speaking. Subjectively the only difference is in the actuality of the sustaining or attempted sustaining of definite pitch during the vocal expression.

Pitch is that characteristic of the sensation of sound which depends upon the rate at which the air waves strike the ear-drum.

Volume is that characterization of the sensation which is produced by the extent of the motion of the ear-drum and quality is that

characterization of the sensation of sound dependent upon the manner of this motion.

Remember voice is not breath. Breath is an air current which vibrates the cords; voice is air waves, which travel at the rate of 750 miles an hour without commotion. Voice is not breath of any kind. If voice were an air current traveling at the rate of 750 miles an hour (about 7 times as fast as a hurricane), it would wreck everything and everybody standing in its path.

The human voice has a vibrator—the vocal cords—and it has a resonator—the pharynx, mouth and nose acting as one—and there is no other proved resonator.

The chest, the sinuses and the bones of the chest are not resonators; they are not available for the reënforcement of tone by resonance. There is a serious objection to the use of incorrect terms in speaking of the constitution of the voice, if for no other reason than that of the inevitable psychological reaction to facts and fallacies, creating a fabric of inconceivable falsities instead of a network of truth for a basic foundation of the art. Incorrect terminology is perver-

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sion of truth. It is misleading and destructive.

Students are forever asking teachers for explanations of vocal phenomena, and teachers are forever explaining things about which they know practically nothing, or else telling the inquisitive students that they should not consider such things—this, with due deference to those teachers who really know and explain.

Scientific knowledge is a most necessary background. It is the safe “take off” and “landing ground” of all flights of fancy.

Objection to scientific voice culture—so called—on the other hand, is perfectly legitimate and reasonable on account of the position of certain scientific investigators who are not practical singers—and who, as before explained, have no adequate understanding of the relation and application of scientific knowledge. It has been well said that knowledge that does not generate achievement is a pale and bloodless thing, unworthy of mankind.

The voluntary part of singing is in articulation—forming the vowels and consonants of language—speaking the words

with intent and purpose, and not with the idea of mechanical fixation.

The involuntary part is the tone production. Ignorance of the position of rest of the soft palate (low and forward) and the position of rest of the false cords (widely separated) has cut short the careers and constantly handicapped the efforts of many celebrated artists within our memory. Speak clearly, distinctly and decisively without any attempt to artificially place the voice. Speak vigorously and govern the form of vowels with front part of the tongue and lips. Do not dwell on the consonants. The air-current mechanism accomplishes most unobtrusively what is known as breath support. No other thought of breath support should be entertained.

Recognizing the nature of voice, it is imperative that we let the mechanism severely alone and fix the mind solely upon the end—which is, to sing beautifully and expressively—and this requires us to sing in tune, to sing rhythmically with correct pronunciation of the words, with special attention to perfect enunciation of the vowels.

The trouble with a great many singers in

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attempting to perfect their art arises from their trying to take out of the hands of nature that which nature purposes to do for herself.

This brings us face to face with the major cause of the various difficulties experienced by so many conscientious students, which, with due attention to the most important fact concerned in voice production already mentioned, are much more easily overcome.

The mind properly directed, will unfailingly bring into subjection the most persistent interference with correct vocal action of the mechanism.

Interference is brought about by the voluntary muscles acting sometimes incorrectly from habitually being used in attempting to locally govern the mechanism. As the interfering muscles are voluntary in their nature they can be willed to remain quiescent during phonation. The art of voice production really is dependent upon the disassociation of the tone-producing muscles and the swallowing muscles.

Inspirational singing leads to ideal singing. Mechanical singing with which our ears are so afflicted is, in nine cases out of ten, the

direct result of interference with the naturally spontaneous involuntary and automatic activities of the vocal organ, caused by the erroneous belief that it is possible purposefully to do something with the tone-producing mechanism in order to improve the quality or increase the quantity of voice.

The quality of the voice should be of first consideration rather than the quantity, because quality is the first requirement. It is the result of the relative pitches and intensities of all the partial tones, determined in the last analysis by the free vibration of the cords and the full use of the resonance. Only under such conditions will there be instantaneous response to desired effect.

Remember that every vowel of the voice is complex—that is, it is made up of fundamental tone and overtones. Remember also that the fundamental tone is the product of the swing of the cords or vocal bands as a whole, and that the overtones are the product of the swing of the segments of the cords. Both are reënforced by resonance.

In normal natural voice production developed by art, we must know that the best

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quality and carrying power is in evidence when the fundamental tone at any pitch is stronger than any of its overtones.

Voice is augmented or reënforced by reflection of the air waves (voice) in the resonance chambers, and the manner of reflection, depending upon the size and shape of the cavities, influences the quality and power. Resonance is the greatest factor in voice production and perhaps the least understood by vocalists.

Overtones and resonance are generally connected in their minds in a vague, indefinite way. They speak of resonance as overtones, without apparently having any idea about the relation of the partial tones to each other.

They do not as a rule have the remotest idea that the higher or more acute the pitch the fewer the overtones. They think that the so called high tones which seem to be in the head almost exclusively are practically all overtones—as they would say. They of course confuse the terms—assuming that overtones and resonance are synonymous terms.

RESONANCE AND SYMPATHETIC VIBRATION

Resonance increases the carrying power of the voice by about 300 per cent. This demonstrated fact shows its importance; but it is of still greater importance for the artist to be aware of the immense saving of exertion possible, and the automatic conservation of breath which is resultant upon the correct application of resonance—and last but not least the consequent removal of strain from the muscles of the larynx. All this means to the singer long life to the voice, and ease and comfort in singing without sacrificing the adequacy of the voice to meet all artistic requirements.

On account of the contiguity of the two sets of muscles in the throat, it is not at all surprising that the vocal world has long been victimized by erroneous beliefs, particularly in as much as in the pronunciation of words, involving consonantal interference with tone production there is the constant tendency, and a perfectly natural one, to commit the error of continuing the tension of muscles other than tone-producing muscles during the sustaining of vowels. The relationship of vowels and consonants in

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song and speech has always been sadly misunderstood to the great handicap of progress in the art of speaking as well as of singing.

Singing comes from an essentially instinctive desire to express with the voice in a musical manner. Almost every one at some time or other has tried to do this very thing without pretending to know a thing about it, and frequently made quite a success of the undertaking.

But when, in the name of science, an attempt is made to govern muscles which only respond naturally to the thought of some kind of expression, and under purely involuntary motivation—never voluntary—certain havoc is bound to be wrought. Half truths are frequently misleading. What the vocal profession needs is complete foolproof knowledge which will clearly differentiate cause and effect in the vocal phenomena. Correct understanding of what to *will*, as distinguished from what to *permit*, is necessary.

MUSCULAR CONTROL IN SINGING

Musical talent is a divine gift and not subject to finite measurement. The application

of finite, scientific measurement, inevitable in the rational consideration of vocal phenomena, is necessarily confined to the physical parts involved. This means, whatever may come under the headings of physiology and anatomy—the functioning of the human structure and the structure itself—and more important still, the application of the laws of physics (acoustics).

So far as the physical side is concerned, we know that a muscular organism to do its best work must be properly trained.

The runner, the boxer, the oarsman, who have physical work to do, must have trained muscles. Now the act of singing involves the very pronounced activity of a muscular system. Singing is for one thing a distinct muscular operation. Hence it stands to reason that the singing muscles must be trained in order to do their most effective work. The first pertinent question is—How? Here is where the keen investigator may find what is sometimes termed “The Nigger in the woodpile” for it is possible inadvertently to train the wrong set of muscles and thereby check normal vocal development.

Psychology has to do with a singer’s gen-

eral concept, his understanding and consideration of the subject of the text with its relation to the music, followed by his mental reaction to the sound of his own voice, and the sum total of his actual expression. This without stopping to analyze or explain the phenomena. The natural singer guides his voice by his ear, and his reaction to physical activities producing certain sensations.

To those who are interested in learning to sing I would say that in the course of study many mountains are made out of molehills. There is a science of voice production which has come from the authoritative analysis of the physical parts involved—that is, the vocal mechanism. There has also been established the relationship of cause and effect in the vocal phenomenon which serves a purpose in the higher development of the art of singing—but this unfolds in a perfectly natural and really a simple manner, although the voice is complex and under analysis presents a very complicated mechanism. Yet, so far as the practical activity is concerned, it is very necessary to know the great truth that the action of the *tone mechanism in voice production is involuntary*. Hence, in

learning to sing, it is not necessary to manage the larynx or the throat by any direct or purposeful control.

The nature of the voice being thus understood, the task of learning to sing becomes greatly simplified. It is of primary and fundamental importance that this fact should be steadily kept in mind—do nothing with the mechanism. A tremendous load of imaginary responsibility is immediately lifted from the mind, and the student is relieved of a wholly unnecessary, self-imposed task which is fruitful of perplexity, uncertainty and real vocal difficulty, and which, if persisted in, impairs the vocal mechanism and eventually ruins it.

CHAPTER VII

TERMINOLOGY

TERMINOLOGY is defined as "the terms used in any art, science or the like." "Terms admit of no change after their signification is fully defined." "Science inquires for the sake of knowledge, art for the sake of production, science being analytical and critical, while art is synthetic and constructive."

From Crabb's "Synonyms:" "Terms from terminus, a boundary, signifies any word that has a special or limited meaning." The precision of a writer depends upon his accuracy in the use of terms. The ideal phonetic notation is one in which there is one, and only one character, to represent a certain sound. Likewise an ideal phonetic terminology is one in which one term, and only one, is used to describe a certain motion. After this term has been definitely decided upon its meaning cannot be changed, or in other words, this term cannot be used to describe another kind of motion in this same field.

This is what is meant by a precise termin-

ology. When such a term is seen or heard, the same idea is in the minds of all at all times.

Without accurate terms, thinking can be only rudimentary. Without accurate terms, our knowledge can be only elementary. Vocal terms may be chosen, so far as they are accurate, from those in general use and therefore generally understood.

Terms which represent mere appearances, however, should be distinguished from those which represent facts in order to avoid misunderstandings.

Scientifically we define in terms which are in accord with the facts or the conditions found in any particular field. We analyze by separating the facts or conditions into their elements or inherent characteristics. We classify by grouping together things which have similar characteristics (facts or conditions).

We must continually define, analyze and classify. As all knowledge is based upon motion we must define, analyze and classify the motions concerned in voice production and phonetics. If we would have a precise terminology, we cannot use the same term to

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describe two or more different kinds of motion found in the production of speech sounds.

There are four different kinds of motions to be found in the science of phonetics; 1st, muscular motion which occurs in the producing mechanism; 2nd, air-particle motion in the completely produced sound which occurs between the producing and the receiving (auditory) mechanism; 3rd, sympathetic motion which occurs in the receiving or auditory mechanism; 4th, chemical motion which occurs in the brain cells and which we term sense-impressions or sensations.

These motions vary so fundamentally in their nature or inherent characteristics, that we must have separate and distinct terms to describe each, or concise description (knowledge) and clear thinking on this subject are not possible.

In describing the constructive processes and conditions there should be a careful differentiation between facts and appearances in vocal phenomena—and also a rigid censorship of terminology, in order to avoid as far as possible the evils of false ideals and

concepts which so often build up well nigh impregnable barriers to progress.

We often hear of singers who are said to possess naturally phenomenal voices and whose voices are naturally "*placed*." This description of the voices of highly gifted singers contains a germ of truth—but the truth is so garbled and distorted by the term that there is often conveyed a false and misleading impression as to ways and means of acquiring what is sought.

The term "voice placing" as applied to tone production has a very real meaning from appearance—that is to say, the voice appears to be static both to the producer and to the hearer. The danger in the use of this particular term in the field of instruction is that the ideas concerning the constructive process of vocal development are apt to bring about misconceptions which may, and often do, offer serious obstacles to normal progress in this desired vocal development.

The apparently static condition—which is doubtless the original cause of the use of the term "placing" or "placement" of the voice—is not in reality a static condition. It is merely an appearance.

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The actual facts of voice production abundantly prove this contention; that is, air waves in constant motion actually account for the voice which appears to be "placed." Hence, at the very beginning by the use of the term "placing" the concept of the singer is at variance with the facts in the case, and this initial misconception is often the direct cause of complications arising therefrom which are distinctly confusing to the rational mind of the singer.

If the actual phenomena of the voice are clearly understood, the appearance of the static condition is then readily understood and the danger of confusion of ideas is avoided. The definite understanding of voice—correctly described as air waves generated by the vibrator and reënforced by resonance made possible by the presence of a resonator—will clear the atmosphere. Again resonance—correctly understood as the reflection of air waves from the resonator—makes a very definite provision for a clear understanding of the reënforcement or augmentation of vocal sounds and offers a protection from such vagaries as "chest resonance," which is, considered as a matter of fact, a

falsity so absolute as to amount to an utter absurdity. As there is no reflection of air waves in the chest there is no such thing as chest resonance.

It is interesting to note, however, that the reason given for the use of this term is that you can feel the chest vibrate by placing your hands on it during tone production—especially at the lower pitches.

While this is an actual fact, easily demonstrated, it gives rise to endless confusion and perplexity in trying to ascribe to it any influence upon the tone produced. The facts of acoustics definitely preclude the possibility of any such actuality as the influence of the chest vibration upon tone production which can be appreciated by the ear. The same may be said of the vibration of any part of the anatomy which may be detected by the sense of touch—as the skull and the spine.

All such phenomena are directly accounted for by bone conduction, and by vibration of air in the chest cavity, but by no stretch of the disciplined imagination can it be conceived of, as having anything whatever to do with the augmentation of air waves which

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might influence either the volume or quality of voice.

There is no such thing in physics as a high or low tone. These terms have always been in use by singers, but they convey a wrong impression and engender complications which lead to all kinds of unfavorable vocal conditions. The immediate cause of this misuse of terms is without doubt the present system of music notation in which acute tones are indicated by a higher position on the staff and the grave tones by the lower position on the staff. Bearing this fact in mind will keep the singer from reaching up or reaching down for high or low tones as they are called.

The involuntary muscular activity of the tone-producing mechanism in the larynx shortens the vibrating length of cords when the thought of definite pitch is what is called high, and lengthens them when the thought of pitch is what is called lower. The other two factors in the pitch-changing mechanism are length and weight of the cords which assume their correct condition involuntarily according to pitch desired; but only in the

absence of interference. Unnecessary strain and effort always result from interference.

These are relevant facts and should be understood by singers and teachers alike.

Right here it may be said that instruction to put the voice in the head is very apt to defeat its own (badly expressed) purpose. It is, in fact, one of the most insidious influences for wrong thinking and wrong doing that we have in our whole category of misleading terms.

Putting the voice in the head is meant to accomplish the purpose of producing it in such a manner that it will be resonant and also relieve the throat of undue strain. It seems to be in the head, or as is sometimes expressed, "in the mask."

The voice properly produced naturally goes to the resonance chambers and is reflected. The phenomenon is really accounted for by the reflection of voice or air waves from the resonance cavities.

"Things are seldom what they seem"—and the practical application is that this "seeming" must not be taken as an indication that the voice should be put in the head—for by so doing the ostensible purpose is

defeated. See to it that the opening to the upper resonance cavities is not unduly restricted.

In the vocal constructive theory as in all other constructive considerations, causes must be known and dealt with. Rational mental processes are necessary in order to stabilize instinctive singing. There must be a scientific background in order that imagination may successfully operate. Speak your words firmly in the mouth and have faith in the naturally involuntary processes taking care of themselves under natural law.

What is generally spoken of as "thick tone" is caused by strong false cord interference—or stiffening of the base of the tongue, which can be willfully relaxed. What is spoken of as "thin tone" is caused by the combination of interferences present which produce tone in which the overtones are stronger than the fundamental tone. Both of these conditions are easily corrected by the removal of all interferences. Such terms are used obviously to describe impressions of effect, and when so used, should be clearly explained. We cannot, from the scientific standpoint, make use of these terms—be-

cause tones cannot be measured in such a manner as to be accurately described as "thick" or "thin."

"Relaxation" is a term which is often used without proper discrimination. In constructive criticism it should be understood that "relaxation" does not mean devitalization and consequent relaxation of the tone-producing muscles. It refers only to the false cords, soft palate and extrinsic muscles of the larynx, the muscles of the chin and tongue, principally the hyoglossus muscles at the base of the tongue.

Undue relaxation of the tone-producing muscles which govern the true vocal cords is always fatal to good results whether in *mezza-voce*, *piano* or in *forte* passages.

"Focusing" the voice is another term which generates a false conception in the mind—a conception entirely at variance with the facts of voice production and again subversive of desired ends. Convergence of rays of light is not in any way analogous to reflection of air waves which augment the tone to the measurable degree of from two to three hundred per cent.

Speaking of a low or high larynx, or a

rising or a falling larynx, if referred to as an existing condition, is an entirely different matter from instruction to raise or lower the larynx. This would make the act of raising or lowering a matter of will power. Now when you swallow you cannot at the same time give utterance to a tone. This is significant.

When you swallow, the larynx rises and the air-current mechanism momentarily ceases to function. When you finish the act of swallowing the larynx descends to its lower position in the throat and you breathe again. It is impossible to raise or lower the larynx in singing except by direct interference with natural processes. Therefore, the use of the terms low and high larynx should be used only as descriptive of a possible condition.

“Spinning the tone” is a term which comes under the classification of imagination—not a fact. Vocal tones do not spin or perform any rotary action as does a top.

From these illustrations it may be plainly seen how erroneous doctrines have arisen which have precipitated so many useless ar-

guments, and which have had as a basis an array of appearances perceptible and recognizable only through imagination.

IGNORANCE BRINGS DECADENCE

Finally there is no doubt that we have arrived at the condition of decadence in vocal art because of the general lack of knowledge concerning actual facts, and because of loose and meaningless terminology, more than from any other causes.

The terminology referring to appearances, and the terminology exacted by science have been used in a hodge-podge sort of way which has led to vast uncertainty of understanding which has in turn resulted in all sorts of confusion.

"Let the tone float on the breath" for instance is another flight of fancy.

What kind of battleship, ocean liner or yacht is the voice supposed to be anyway, ask the scientists. Well, replies the imaginative artist or vocal teacher, the tone should *seem* to float out easily. (More empiricism, again the product of the imagination, again the interminable conflict between fact and fancy.) White voice—dark color—what relation has

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the color of ether waves to the quality of voice? (air waves) ask the scientists.

Why not get a bucket of black or red paint and pour it down the singers' throat if he sings too white? This might color his tones beautifully. "Oh, you don't understand," says the artist. And so the argument continues, all at sixes and sevens, and all to no purpose unless a ground of understanding can be established.

The duck proposes to swim and the wise old hen still berates. They don't understand each other. The hen doesn't know how the duck can swim.

The very general instruction to "cover the tone" superinduces a condition of interference with the vocal mechanism and generally produces an effect which might better be described as "smothered tone." The only remedy for this, as a wag said, is to smother the teacher.

The tone which is generally known as "covered tone" is not best induced by instruction to cover. This fact is borne out in the light of practical experience. "Covering the tone" is not a scientific term, and the attempt to cover it is apt to smother it.

"Open and closed tones" are two more of the fine collection of indefinite and misleading terms which lead to all sorts of confusion in the minds of students. The term "open tone" is sometimes used to describe desirable and sometimes undesirable quality or condition. The same may be said of the term "closed tone."

Instruction to open and close tone is rarely satisfactory in results. These terms are likewise unscientific. Tone cannot be opened, and it cannot be closed, but resonance chambers can be opened and the shape of the resonator can be adjusted so that what are called open and closed tones may be in evidence. Instruction to open the throat should be carefully explained as referring to that part of the throat called the pharynx. But instruction to open and close a tone is a doubtful way of expressing what is wanted and is fruitful of all kinds of bad results. The student is again in danger of trying to do something with the tone-producing mechanism and generally does that very thing.

Interference is at once in evidence when the nature of the voice is not understood by either teacher or pupil. Lucky escape from

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bad results is all too infrequent and there is no escape except by the actual failure of the student to obey. If he happens to get what is wanted he certainly hasn't actually obeyed such instructions, but rather has unconsciously followed his instinctive feeling of right.

If the vowel is produced correctly it may be referred to as open or closed—and when the vowel is well enunciated and the tone produced without interference, there is great latitude for volume and quality according to the effect which is desired.

The will power should be used to articulate well and to form the vowel correctly and to sustain the vowel sound and to let the tone producing mechanism severely alone. All the desired effect of what is known as open and closed tone will then automatically occur.

Regulate the form of the resonance chambers at the outlet which is the mouth and avoid interference of false cords, soft palate and tongue. See that the muscles under the chin and at the base of the tongue are not stiffened. A stiff tongue and a stiff chin are a pair of bullies that upset all calculations as

to desired effect if they are aggressively employed in voice production.

We may indulge in humorous persiflage and we ridicule, as scientists, those vagaries even of our own dear selves, as artists, but we must strike a ground of agreement from understanding which will be mutually satisfactory and determinate. We must use terms which are accurate, in describing conditions as they are known to exist.

We can do it in just one way, and that is in the acknowledgment and acceptance of truth regarding facts as proved, and we must recognize the influence of the imagination as well, but we must beware of the wild influence which it may exert in the absence of a well educated ear.

Educated ignorance is the most dangerous enemy to progress in the Arts. The terms used to express motion and condition represent a very highly developed education of ignorance in vocal art.

Let us see if this is an unwarranted charge. Some years ago we were seriously to consider the "attack of the glottis." Shades of duellists, gladiators, bull fighters and pugilists, why in the name of all that is

sane should we attack a defenseless glottis which is merely an inoffensive harmless slit—the space between the two edges of the vocal cords observable during phonation?

Could anything be more absurdly brutal as well as unnecessary? If you attack the glottis, you, without provocation, attack your best vocal friend—your vocal cords—which shape the glottis. I should as soon consider seriously the advice of a physician to eat the hole in the doughnut for the sake of the nutrition therein contained.

Your unwarranted attack might, however, injure the vocal cords. So don't attack.

The term register is best understood in connection with hot air heaters. Even by inference or implication registers do not exist in properly produced voices. Unwarranted interference accounts for the use of this term which describes presumably a change of characteristic quality in different sequences of tone throughout the scale of the voice.

Change in the pitch-changing mechanism in the larynx occurs when we change pitch. The primary cause of change in pitch is purely psychological—from musical sense or talent—an unmeasurable factor in singing.

If there is no interference in the tone production there will be no difficulty in singing throughout the full range of the voice by the proper use of one so called register.

The approximation of the vocal cords during phonation is an involuntary act of Nature; it is an instantaneous response to the desire to make use of tone sounds of any kind; or we might say it is a response to the instinctive desire of expression—as of the child at birth. The edges of the cords do not actually touch each other in vibration, but they do approximate.

The “forward tone” is a descriptive term which is used to express the idea that the tone seems to be in the front part of the mouth. This tone, as all other tones, is generated at the vocal cords, and is reënforced by resonance. The assumption is that such a tone is not interfered with at the throat.

This reference to condition is perfectly admissible, but it is not necessary to tell the student to place the tone forward, because if the word is well spoken, and there is clear articulation—the vowel freed quickly from the consonantal interference—as it should be, the tone will appear to be in the front part

of the mouth. The moving air current which generates the tone by vibrating the cords is largely responsible for the regularity or irregularity of the tone.

The usual empirical instruction is to "place the voice forward," which may serve the purpose, but is not reliable.

This kind of instruction is representative of the inadequacy of empirical instruction in general, unless it is supported by an explanation of the facts in the case.

Such empirical instruction as was employed by the old schools of singing—as, "sing on the breath," "support the tone"—has been handed down as the traditional mode of instruction, and was successful and is still successful in some cases where the pupil is able to sense what is required.

The danger of all empirical instruction is that it involves so much of falsity as to facts when any rational explanation is attempted. This is the main reason why there should be an understanding of actual facts in voice production. Flights of fancy may then be made to serve a very useful purpose.

"Nasal resonance" is a term which is also descriptive of appearance, both from the

sense of hearing and location of sound. The tone seems to be in the nasal cavities, and it is true that the vibrations generated at the vocal cords are actually in process of reflection from the upper part of the resonator when this appearance of "voice in the head," or nasal resonance, is noticed.

The nasal quality and the throaty quality, of which we hear so often in vocal discussions, are terms which represent undesirable conditions of the vocal mechanism as reflected in the voice. Both conditions result from false cord interference and soft palate interference in different degrees and proportions.

Thus we find in all cases that major evils in voice production arise from the kinds of interference mentioned. With their removal, we find that we are singing with free vibration of the cords and with the full use of resonance.

"Chest tones" are also so called from appearance. The conditions attending this appearance are the dominating influence of the strong fundamental and the lower overtones. On account of the larger resonance-space re-

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quired for reënforcement of the lower pitches and the greater swing of the cords, vibrations seem to be in the chest cavities, but as before explained, there is no possible chest resonance.

CHAPTER VIII

THE BREATH-CONTROL FALLACY AS A MENACE TO SINGING

THE "breath-control" and "breath-support" thoughts in the minds of students who are trying to learn to use their voices properly are, all in all, about the most destructive thoughts that they could possibly entertain. My experience in teaching many advanced pupils and singers already in professional work, as well as a countless number of beginners, proves to me that the statement is absolutely true.

The testimony of all those who have practised willful breath-control in singing and have seen the light of truth regarding this matter tallies with my convictions, i.e., that it is the most pernicious doctrine extant.

The vocal world will never be free until the present interpretation of the term shall be forever abandoned.

The legions of ambitious students who have been checked and strung up, sacrificed upon the altar of "Breath-control" is abso-

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lutely appalling—all on account of putting the cart before the horse, so to speak.

Involuntary breath-control is one of Nature's inviolable laws as applied to speech and song and Nature deals severely with those who defy that law. But conscious "Breath-control" is a veritable octopus reaching out its hideous tentacles in all directions.

Even the newspaper critics are not immune—they naturally subscribe to and make use of the terminology of the day, and speak of Mr. or Miss so and so as having good breath-control.

This in itself may be perfectly true, but the evil of such suggestion is that the hopeful student and the many teachers who ought to know better aid and abet the false deduction. To control the breath purposefully is scientifically untenable and practically subversive of desired ends. What causes so called breath-support? Answer—the spontaneous action of the air-current mechanism in response to desired tone. Tone is also spontaneous. The sympathetic nervous system acts upon a naturally responsive and coördinate muscular system.

The will to sing will always be followed by a lightning-like response of the vocal mechanism unaccompanied by any effort to control the mechanism itself. Due economy of breath will be resultant.

The breath acting as an air current merely performs its functional duty by vibrating the cords. The effective and resultant phenomena of breath-control is at once in evidence, and is best maintained in the singing of long phrases by governing the tones and letting the breath continue its natural rhythmic action in respiration. Nature will herself use that part of the air in expiration which is required to vibrate the cords.

The term "breath-control," then, should never be used to indicate something which must be done by the student.

Here and there, but all too infrequently, a vocal teacher blessed with unerring intuition has sensed the right attitude, and without the use of logical reasoning has practically brought about consistently good results; but the guiding lines have never been sufficiently well defined to present an influence sufficiently far-reaching and powerful to establish a telling resistance to the wrong

thought. This actually has created a perfect landslide of vocal iniquity.

Those who sing well have done so in practical defiance or delightful ignorance of the prevailing doctrines of breath-control. The natural force of intuitive predilection has overcome the gaunt enemy of truth. But those who have come through unscathed are numerically small in comparison with the number who have been misled by the erroneous doctrine.

The vocal world has almost universally put the cart before the horse. The mind directed toward willful or direct breath-control entertains a practical inversion of truth as regards natural and normal functioning of the vocal mechanism.

The lungs filled from the bottom provide the substance for the natural involuntary breath motion during the act of singing. Let no one vainly imagine that this is a splitting of hairs. All willful breath-control invites false cord-interference and evil consequences of such attempts are inevitable.

The resultant evil of the wrong mental attitude regarding this matter is, with us, firmly ensconced in the opinion of an army

of well meaning but fearfully deluded teachers who daily disseminate the willful breath-control and breath-support doctrines to a many times greater army of credulous students who live and prematurely die, vocally speaking, through belief in this popular delusion so generally accepted as representing a first requirement in higher vocal education.

SPONTANEOUS VOCAL EXPRESSION

But what may be offered in support of any doctrine which may reasonably be accepted as a substitute for the prevailing doctrine? Simply this; the so-called "breath-support" and "breath-control" must be regarded as purely resultant from spontaneous vocal expression following the correct intake of breath, which acts under various degrees of compression upon the cords immediately vibrating them in exit.

The baby from birth has breath-control in its first cry, but a mighty effective breath-control it is and not premeditated. This is always a convincing demonstration of a fundamental law concerning the nature of the vocal mechanism. This law is in force from birth until death, in the life of every human

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being—and in the animal kingdom as well. It is universal, uncompromising and unchanging in its edict.

The center of the sympathetic nervous system is at the solar plexus and it is undoubtedly due to the close proximity of this vital spot to the diaphragm that the nerve and muscular control has been confused with a supposed diaphragmatic breath-control. The diaphragm, being naturally passive during exhalation, sets at naught the fallacious doctrine of diaphragmatic breath-control. Correct breath-control, being normally resultant upon the muscular action incident to spontaneous vocal expression, should never be treated as a matter of will power during tone production. The involuntary activity of the vocal mechanism will become more and more effective as a consequence of the development of the true vocal muscles—consequently the natural principle will be found to be practically the easiest as well as the most effective solution of this question.

PERFECT CONTROL WITH EFFORT

We shall therefore find that the singer who would be a real master of breath-control

should never purposefully control the breath. By way of further elucidation of the subject we may call attention to the fact that when a person lifts a heavy weight he involuntarily holds the breath by the sudden closing of the false vocal cords—for we must know that voluntary muscles may, and frequently are, acting automatically in the absence of purposeful control—and this is an instance when such activity is invariably demonstrated. It is of interest to know that anyone can hold the breath or refuse to breathe until he approaches a state of unconsciousness, but not to the point of death; because the system, demanding oxygen, produces involuntary action of the breathing muscles, whereupon respiration will be resumed and consciousness will be fully restored.

Finally we may understand that any attempt willfully to govern the breath while attempting to sing involves activity of the false cords or interference which may be entirely removed by the will power because the interfering muscles are voluntary in their nature. Bad habits as well as good habits in muscular action become fixed and eventually determine to a great extent the status of the

singer. Involuntary muscles are always the same from the beginning. They develop naturally by use if their normal action is not interfered with. It is the business of the singer to remove interference by refraining from any attempt to control the tone-producing mechanism. The involuntary muscles or true vocal muscles may be developed to their full capability more rapidly by proper exercises unhindered by muscular interference.

Herein is found the first necessary understanding of correct voice-culture, according to the natural law, which is, "Non-interference with the action of the vocal cords and the full use of resonance."

As has already been explained, the resonance cavities are comprehensively found to be the pharynx—upper and lower—the nasal cavities, and the mouth. The full use of resonance involves the quiescent condition of the false cords, the relaxed condition of the soft palate and a firm condition of the vibrator.

Present breath-control, breath-support and voice-placing theories are figments of undisciplined imagination, to be classified historically, as sprouting, budding and flowering, some time between what is known as

the golden age of song and the present time. It is high time that these poisonous fungus growths should wither or be destroyed by common consent. At any rate they will automatically disappear when the truth becomes more generally disseminated concerning the nature of voice.

The teaching of breath-control has fed, fanned and kept alive a flame of falsity—at least so far as practical application is concerned—which has proved to be a constant stumbling block to singers of repute as well as students. The cause of this persistent notion is the occasional inability to execute long phrases because, as the singer thinks, he has run out of breath. Well, so he has; but very likely it is because the fact has not been sufficiently emphasized that the best way to conserve and economize the breath is to make no conscious effort to control it, but rather to control the tone, without the attempt to check the air current in exhalation.

It is best controlled when no attempt is made to control it as such, however paradoxical this may seem. Here is where the confusion starts. The fact is that the energy stimulating the nervous forces in the singing

of a phrase compels a muscular action which automatically economizes the breath.

When the resonance chambers are acting normally there is far less breath used and far less tension in producing desired effects than when their functioning is limited by interference—such as the stiffening of the base of the tongue and the stiffening and raising of the soft palate. Cutting off resonance means the loss of at least fifty per cent of the intensity and volume of tone.

It imposes unnecessary strain upon the vocal muscles by requiring a too great amplitude of vibration of the cords (in the absence of resonance) and disturbs the necessary combination of air waves for quality.

Resonance increases carrying power, intensity and volume by several hundred per cent. Without resonance we could not produce the variations of tone sounds necessary for song and speech.

Nearly all present-day writers confuse resonance with sympathetic vibration—in explaining augmentation of sound—which latter requires a second vibrator, as is the case with piano and violin, which have no

resonance. As at present constructed, they have only sympathetic vibration.

It may be well to mention that all encyclopedias and all dictionaries define resonance as sympathetic vibration. In all likelihood this will be corrected in new editions, as it is now recognized that the present definition is incorrect, not being in conformity to facts.

Breath-control in speaking and singing is an ever-existent and necessary fact. From the shortest sentence of speech or the shortest phrase of song—articulate or non-articulate—it is present, but this does not necessarily mean that the purpose of the singer or speaker should be directed towards the accomplishment of that end; and, above all, it does not mean that in order to secure the requisite amount of breath for the adequate delivery of a long sentence or a long phrase in song, the mind must of necessity be riveted upon breath-control. In fact, it should not be so riveted, because it is unnecessary, and because it practically encourages interference.

The problem of breath-control, especially in singing, has presented itself as a direct

result of a seeming necessity, and the seeming necessity has obtruded itself into the domain of vocal control for the very simple reason that the singer becomes acutely conscious from time to time during the delivery of phrases that he cannot proceed—because he has run out of breath, or feels that he is doing so.

It then becomes an obvious necessity that he refill his lungs or at least take another breath in order to go on. This leads to the conclusion that he must husband his breath, or control it, so that he will have enough at least to finish a musical phrase. He is keenly alive to the absurdity of the effect of taking a breath as, for instance, after the article and before the noun to which it refers—i.e., “Thus saith the (breath) Lord.”

To avoid the possibility of any such calamity in a long phrase, the singer decides that he must control his breath, and, sad to relate, the average vocal instructor not only aids and abets this artistic crime, but devises means of various kinds to promote it, drawing upon his fund of information concerning anatomy and physiology, whereby the singer may be able to hold and economize, or

distribute his breath in such a manner that he will have enough to finish phrases or to apply sufficient vocal power for effective expression—to crescendo or diminish at the proper time, as becoming a really artistic interpretation. Under such mental processes he gets, as they say, the cart before the horse. He is like the countryman ignorant of the history of our country, who went to Boston to see the sights.

He got into a bus which took him to Bunker Hill. Stopping there, the tourist guide, pointing to the tall Bunker Hill Monument, dramatically announced: "And here is the spot where Warren fell." The countryman, looking up in awe and wonderment at the high monument, exclaimed: "I should thought 'twould have killed him."

INVOLUNTARY BREATH-CONTROL

If a camping party were sitting about a campfire at night and a sound, for example, the ominous sound of a rattlesnake was heard, it is very likely that everyone in the circle would hold his breath for a moment. This action would be involuntary, from nervous tension.

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When any startling news is heard it takes our breath away, as we say. When we consider the matter of breathing we realize that we breathe to live, and so we understand breathing to be an integral and essential part of the scheme of life in general.

Any unusual happening which disturbs us or excites the feelings or emotions to any unusual degree affects our breath activity. We breathe slowly or quickly in response to the immediate condition of the nervous system. Our feelings and emotions have much to do with the action of our breath, and so we must adequately control feelings and emotions.

The singer is called upon to sing long phrases on one inspiration or breath, and breath is, of course, of paramount necessity, but as has been explained, control is dependent upon conditions which will incidentally accomplish the result rather than upon direct attention to the processes.

It is on account of the very general misunderstanding of the meaning of breath-control as applied to the synthesis of voice production that many unnecessary difficulties

have presented themselves to the struggling vocalist. Obstacles which might be easily overcome have persistently remained, despite the most valiant efforts to remove them; all on account of the lack of correct understanding of the natural functioning of the breath and breathing apparatus and its proper relation to voice production.

When the vocal student is told that breath-control is the most important factor in voice production and is not told that breath-control is a natural consequence of air currents, and *tone control*, then it is that the wrong initiative is suggested; it results in the wrong application of the will power, and a constant failure actually to accomplish the very thing desired.

AUTOMATIC BREATH-CONTROL

Breath-control properly classified as indirect or resultant, would lighten the load immeasurably and invite the correct mental attitude which would eliminate the superfluous, confusing and dangerous element of willful breath-control as very generally taught.

The result in every case would be found to

be beneficial in point of accomplishing the desired end.

The chief reason for the prevalent ideas concerning the subject is found in the fact that singing without the full use of resonance requires a much wider swing of the cords for adequate volume, and this requires much more breath—which is unnecessarily used. Breath is automatically economized by the proper application of resonance and the removal of interference.

The late Ffrangson Davies, celebrated baritone and author of “The Singing of the Future,” says:

Irresistibly we are drawn to the conclusion that right breathing can only be judged by right tone, and that right tone can only be judged by the *summum bonum* of the singer, viz. pronunciation—pure truthful pronunciation (not so-called “singing” or “vocalized” pronunciation) in every part of the voice, high or low. The word with its atmosphere is the text.

CHAPTER IX

RELATION OF SCIENCE AND ART

"Ignorance never settles a question."—Disraeli.

"Give light and the people will find their own way."—Dante

ALL successful inquiry concerning the order of nature must of necessity be founded upon a solid basis of well authenticated facts.

Almost all of the vocal contributions which we read in musical magazines express opinions of various individuals which opinions are based upon falsities generally accepted as truths. Everyone has a right to opinions even when everyone else knows that they are wrong; but mere opinions should not carry the weight of authority. This matter of science has a very definite meaning which, when properly applied, bears the same relation to any subject as "two and two is four" bears to mathematics. Now it should be known that opinions are to be depended upon as positively representing truth, only when they are substantiated by proven facts. Nevertheless, opinions on any subject may

be of value as suggestions which may *lead* to the knowledge of truth.

Discriminating people may discover truth even from absurd statements of purported truth—as, for instance, if one man says that vocal tone is breath, anybody who is interested may, through proper investigation, discover that this is not true. Now there are a great many vocal investigators who postulate popular fallacies and arrive at untenable conclusions because of the lack of thorough investigation.

The early singers and teachers were a good deal like the ancient philosophers. They really had only intuitive perceptions of truth, some of which can now be confirmed by science, but they also had ideas which were false and misleading, which obscured actual truth, and which made clear vision and hence consistently constructive measures impossible. They wandered far from truth concerning voice.

To bring the real knowledge of voice and vocal phenomena home to singers and teachers we have stated the facts which have been verified and classified. Inductive reasoning has established broad generalities which we

may now consider as suggestions of truth instead of falsity, from which each individual teacher and singer may reason deductively. The calamities which generally result from wandering about in muddy speculation may now be avoided and the imagination may be disciplined to conform to facts in the vocal phenomena.

A new era of thought concerning voice production is at hand, arising from the knowledge of facts. We do not know it all as yet, but we know enough to wander no longer in the morass of uncertainty as to important facts. Hypothetical conjecture without the support of substantiated facts can no longer be tolerated as authoritative dictums—and many such must be forever discarded as legitimate tools in constructive work.

EARLY SCIENTIFIC EXPLANATIONS

It was not until about the year 1700 that any scientific explanations were offered accounting for the physical phenomena of voice. It was still later when there was any attempt to place the art of singing on a scientific basis; and then they did not know-

ingly use psychology, mainly because this science was not sufficiently established.

In the general consideration of voice and voice production we are confronted at the very outset with a very complex question as to the relation of the immediate and observable causes (physical) and the remote causes of its production (psychic).

VOICE IS NOT BREATH AND BREATH IS NEVER
CONVERTED INTO VOICE

Beginning with the physical phenomena we find upon analysis that voice is air waves and not breath. Unobstructed breath does not even produce sound of any kind. There are no phases of condensation and rarefaction which can excite the eardrum and thus make it audible.

Considerations of this kind lead to the investigation of physical activities; but the governing causes are still to be investigated.

We shall present the psychological influence upon voice production in another chapter.

Now concerning science and art; rules can be given for any constructive art development which are the results of scientific in-

vestigation and, which we may logically infer, influence all great works of art. These rules when obeyed will lighten the path of artistic progress. But there are those who do not wish to be governed by rules. They prefer to be a law unto themselves—to be original and to experiment with all kinds of imaginative ideas which may spring up in their minds and which they conceive may be more effective than the following of any rules. They rejoice in fancied freedom to think and do as they like, regardless of what science or knowledge may proclaim.

When we come to investigate the modes of the government or control of the voice in singing we find that it is highly important to understand how to exercise the will power. We are constantly reminded that the exercise of the fiat of will in certain directions is beneficial and, likewise, when exercised in other directions, harmful.

Generally it is a matter of trying to get results by various experiments for which there is no reason given. It is a case of hit or miss, and if perchance a favorable result is experienced as a consequence of some particular activity, the singer thinks that he has at

length discovered how to sing. He often finds, however, that it is not so easy to do it again. It seems to be something of the "will o' the wisp" nature—this voice of ours. Now you have it and now you have it not.

We can sing a tone with the tongue high and forward or we can sing it with the back of the tongue pressed down and back.

We can sing a tone with the soft palate drawn up and against the back of the pharynx.

Now which are the correct positions during tone production, and how are these positions to be maintained?

Decisions regarding these and similar questions are generally made from certain convictions which frequently come from confidence in some particular person who says thus and thus is so. Or it may be that they are made because it seems to the singer that certain conditions should obtain—as for instance it may seem reasonable to suppose that the raising of the soft palate will make more room for resonance, and that the back of the tongue when pressed down will do likewise.

If the singer in such dilemmas as he frequently finds himself but knew the facts con-

cerning the nature of voice he would know what to will and also how to direct the will. Under such circumstances his efforts to obtain satisfying results would be rewarded by consistent gains. The proof of correct vocal activities is found in the vocal effects produced, discernible through the sense of hearing and through the sense of comparative ease and comfort during that delivery.

We know that in considering vocal problems we have to deal with the activities of both the conscious and the subconscious minds, or in terms of Behavioristic psychology, we might say both the defining and intimate sensory processes. Whatever the subconscious mind contains from suggestion which it seeks to express is governed by the conscious mind in all healthy individuals.

There is no subtlety about voice production and there is no secret about the correct governing principles, the following of which is necessary for consistent progress in developing and regulating the potentialities of the voice.

The only subtlety that may be said to exist is in the subconscious mind and must refer only to feelings and emotions, which, it is

granted, are at times exceedingly difficult to unravel.

Complete mastery of the voice can never be assured while the singer remains in ignorance of the normal activities of both the voluntary and involuntary muscles in controlling the expression of thought, feelings and emotion.

Science definitely answers all inquiries concerning the physical part of voice production.

When we speak of science we speak of knowing, and art is best developed when there is an understanding of the related science. There is no good reason for pursuing art and ignoring or remaining in ignorance of the scientific knowledge pertaining to that art. If we do, we throw away our balance wheel—our steering gear—or become what Leonardo da Vinci has aptly styled “a boat without a rudder.” It is much safer to sail in a boat under the guidance of a rudder—especially in stormy weather.

To regulate vocal conduct and to make proper adjustments, scientific understanding is necessary; therefore it should never be ignored, scoffed at, nor side-stepped by intelli-

gent persons, and least of all by vocal teachers who would stand as duly accredited authorities.

We must subscribe and conform to the natural law of voice production, i.e., non-interference with the vibration of the true vocal cords and the full use of resonance.

Recognizing the tone-producing mechanism as involuntary in its nature logically precludes the possibility of any such theory and practice as voluntary control of this mechanism.

The intrinsic muscles of the larynx, involuntary in their action, produce tension of the cords and normally regulate their vibrating length and weight. These factors regulate pitch, and when allowed to function freely, without interference, permit the widest range of voice possible.

The will power from understanding then governs the kind of vocal expression in which we indulge, by going directly to the desired end. The will power is properly used to control the shape of the resonator at the mouth. It regulates quality, which is sometimes spoken of as "color."

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INSTINCTIVE VOCAL ACTION

The tone-producing mechanism immediately governed by the intrinsic muscles responds to the will of effect from desire. If you wish to cry out, to shout, or to murmur words of supplication, or speak or sing in a manner intended to be greatly persuasive, or to utter authoritative statements with fine tonal character intended to carry conviction, or to command, the true vocal muscles act involuntarily, as becomes their nature, and spring into proper activity spontaneously and without any application of the will power to regulate their normal action. Breath-control is then resultant. The tone-producing mechanism is only 100 per cent efficient when its action is free from interference.

The common tendency of singers is to force the production of their voices. This prevents the natural development of the true vocal muscles by checking their normal functioning and develops an abnormal and unnatural use of the swallowing muscles.

The swallowing muscles and tone-producing muscles are closely associated but diametrically opposed in their action.

The secrets of fine voice production and effective systems of voice culture are herein contained, and all efforts to solve vocal problems without recognition of these facts are very apt to be vain and fruitless. It is only when vocal activities conform to natural law that good results are consistently obtained.

Every effort to do something with the larynx, either to hold it up or hold it down, or to dictate its activity in any way, inevitably promotes some form of interference which eventually undermines the health of the vocal organ.

“NATURAL VOICES”

What are known as “natural voices” and “natural-born singers” are two different things. We may differentiate in this manner:

We mean by “a natural-born singer” one whose tendencies lead him to attempt to express himself by means of the voice, which feat he is able to accomplish without any previous study or preparation. He has, perhaps, pronounced musical talent, but may be handicapped by a voice which is not particularly agreeable in quality. It may be a voice of limited range and lacking in what we

speak of as resistance. It may be lacking in power. Such a voice, however, may nevertheless contain potentialities which, under proper training, will develop admirable quality, sufficient range, tonal volume and intensity, which will make it really effective in song.

A fine natural voice as generally understood is a voice which, without training, is distinguished by evidence of power, beauty of quality, unusual range, or all three. The possessor of such a voice may be also a natural-born singer. If he is, he is particularly fortunate as to endowment. It only remains for him to have a generally well cultivated mind and to pursue a proper course of study to insure success as a singer; a broad education will complete his equipment. A naturally great voice, however, may be possessed by one who is not a natural-born singer. He may not be even musically inclined. More frequently, however, we find many such voices among people who have limited musical talent but who are more or less ambitious to accomplish something in the vocal world. Such people should never be encouraged to make singing their chief occupation.

Knowledge concerning the action of different muscles at different pitches of tone, however, does not represent a comprehensive knowledge concerning voice production. What we need is more complete knowledge for a practical direction of our vocal activities, both as to intention on the part of the singer and as to the results of his efforts—psychological as well as physiological. Above all, we must know how to remove interference, which is almost universal among singers and speakers as well.

The empiricists with which the land abounds must be educated to the point of understanding the value of facts in the vocal world and not to waste their time juggling with chimeras. At present, as in the past, they are trying this and trying that more or less unsuccessfully. Under such conditions there is no certainty of obtaining satisfactory results. It is always a question of hit or miss—and too often of miss. They are slaves to tradition with all its weakness, ambiguity, vagueness and falsity.

Tradition embodies such a conglomeration of truth and falsity that it is anything but dependable for constructive purposes. Only

those in possession of the knowledge of facts can separate the wheat from the chaff in the training of the voice. Without this knowledge, appearances are frequently mistaken for facts.

Both the fair and the foolish questions concerning voice production—and some of their answers which occasionally appear in print—proclaim the depths of ignorance and consequent futility of many present-day schools of singing.

Complaints of failure to accomplish certain things in the use of voices reveal the all too general lack of knowledge pertaining to the art.

Consistent gain involves the necessity of having a definite knowledge concerning voice production, and this means a knowledge of cause and effect in the vocal phenomena.

The percentage of earnest vocal students possessing musical talent, but who fail to arrive, is all out of proportion to what should be expected, and this condition can only be remedied by the correct application of scientific knowledge. This knowledge must comprehend the meaning and causes of interference—and how to remove it. Only through

this knowledge can there be any certainty of the true vocal muscles being properly developed.

Without a well trained vocal mechanism, the artist has no reliable vehicle of expression, and in order to insure the correct training it is imperative that close attention be paid to the character of the sounds which come forth from his own throat. The ear must first be properly educated as to desirable and undesirable quality, and then, as there is constant appeal to the ear, the sense of hearing becomes discriminative and judicial.

The ear, when educated, tells you when you are at fault in the matter of voice production, but it does not tell you how to remove the cause of faulty production. This comes from an understanding of the nature of voice, its governing laws, and from the enlightenment of experience.

The scientist arrives at truth by subjecting his theories to severe scrutiny. Farraday says that ninety per cent of the imaginings and theories put forth by the scientist are crushed in his own severe self-criticism. The empiricist, as a rule, knows but little of nat-

ural law and still less of the relation of cause and effect in the vocal phenomena, but he spends a considerable amount of time trying to prove faulty theories which he is personally familiar with and thinks must represent the truth—mainly on account of popular belief in them.

STABILIZATION OF METHODS

In considering scientific principles we must recognize that the advance of science has done much for singers. It has stabilized methods, or perhaps it is better to say that it has rendered possible the stabilization of methods. Among other things, science has proved that vocal tone is always more beautiful and more effective when the fundamental, at any pitch, is stronger than any of the overtones.

Science has made clear the meaning of overtones—a term so loosely and improperly used and the conception of which in the mind of the singer is so vague. Science has made plain the meaning of resonance. The confusion of what is properly known as resonance and overtones is very common. Resonance is frequently referred to as overtones. Science

has also made clear many other problems with which singers are constantly confronted, chiefly the nature of voice, the cause, effect and meaning of interference.

Vocal teachers who know their anatomy (structure), physiology (functioning) and, above all, physics (laws which govern) produce far better results than those who know nothing of the sciences—and those who also understand applied psychology are still better equipped and produce still better results.

Experience is without doubt extremely valuable, but there is a world of unhappy experiences to be avoided by comprehensive knowledge—besides a great waste of time.

CHAPTER X

THE PLACE OF PSYCHOLOGY IN VOICE PRODUCTION AND IN SINGING

IN ORDER to attain the highest achievements in the art of singing there should be present in the minds of singers a solid background of understanding concerning the nature of voice and the normal activity of the vocal organ itself. And, as the use of the voice is the most general as well as the most important means of human expression, we can, to advantage, analyze the thoughts and emotions as reflected in the voice.

The objections which have been raised to scientific voice culture, and which have from time to time appeared in print, have been made without due consideration of that definite knowledge which not only facilitates but makes certain the desired progress. Moreover the efforts of serious-minded members of the vocal profession to accomplish major results cannot possibly be universally successful without a well defined understanding

of the influence of psychology in human expression.

In taking up psychological considerations as pertaining to singing, we must remember that psychology enters into all the affairs and relations of life of which the singer is a part. Nearly all intelligent singers and competent teachers recognize more or less clearly the cogency of applied psychology, and in general the universality of the psychological influences.

In "The Lost Vocal Art" it is pointed out that psychology, though unnamed, was undoubtedly the underlying factor which had most to do with the success of singers in all the history of vocal art. A large number of world-famous artists and scientists endorsed this opinion. In our present day and generation psychology has come to mean more to all men and women than formerly, by reason of the increased knowledge which has come from continuous inquiry, research and investigation. It is now a scientifically workable proposition.

Now, emotions are important factors in psychology. They are universal attributes of human nature.

In singing we are expressing ideas musically. We are actually expressing someone else's ideas according to our own conception and there is constantly involved the element of human interest involving various emotions.

These emotions appear with greater or lesser intensity, depending upon the interest in the subject, and are accordingly depicted—modified, of course, by one's ideas concerning the eternal fitness of things. Thoughtful and emotional expression generally arouses a more or less sympathetic response in the audience—and this represents the power of personality, the most important factor in awakening the interest and attention of those to whom the message is addressed.

PSYCHOLOGY OF REAL SERVICE TO THE SINGER

Man is never a willing agnostic. From time immemorial he has sought a satisfactory answer to every problem which has been presented to his querulous mind; but the average man is not a trained thinker. What little thinking he does is superficial and gen-

erally disconnected. He doesn't want to think any more than is absolutely necessary, and hence is very apt to accept blindly almost any popular edict concerning almost any subject.

On the other hand, if his experience in blindly accepting numerous theories of unproved value has brought him any serious inconvenience, he perhaps has formed the habit of rejecting everything, and receives all information with a grain or more of salt. He thereby becomes a general doubter, and, from his lack of faith in everything and everybody, may develop into a veritable pessimist or misanthrope. Naturally he is unhappy.

Man wants to know—though he is seldom willing to pay the price. The singers who have tried the methods built upon the platform that man is only a machine, and who have consequently overlooked the psychological factor in the equation, have never been rewarded by very satisfactory results in solving their vocal problems.

There is not contained in that acceptance satisfaction of a demand for the truth, the whole truth—so far as obtainable—and nothing but the truth.

EMOTIONAL FEELING STIMULATES
THOUGHT

We must take cognizance of the fact that what stimulates thought is feeling from the emotions, and that the most cogent expression of thought, feelings and emotions is effected spontaneously by the human voice in articulate language.

As to the emotions themselves, they are in turn developed, regulated, and in a measure subjected to influences which are found in the environment. In estimating the potentialities of a prospective singer, predispositions or instincts from heredity are also factors to be reckoned with. It must be remembered that "Voce, Voce, Voce" is an encouraging factor to begin with, but without the birth-right of talent, and particularly musical talent, a real success is difficult, not to say impossible of attainment. Nevertheless on account of the generous, and very general distribution of talent, almost anyone can actually learn to sing.

In the realm of psychology we shall find the missing link in many schools of voice culture. The intelligent expression of thoughts, feelings, and emotions is the

singer's goal. The opportunity and willingness to apply one's self to the task of self-discipline is most needed for successful development.

"The singing instinct is more general, music ability more latently beautiful than many of us imagine.

The germ is there; the step between appreciation and performance is not insurmountable, and, as musical appreciation is more general than is usually supposed, so also is vocal power. Given a fairly keen sense of pitch and rhythm, in other words modest musical intuition and capacity for work, singing becomes a mere matter of practical development under the guidance of a linguistic and imaginative thought. Without doubt special endowments exist. What is suggested is this: Voice and vocal ability are easily accounted for. A voice is the gift of God; so are the predisposing causes of voice. Cultivate these and voice follows."—Ffrangson Davies in "The Singing of the Future."

The psychological factor in singing is without a shadow of doubt the most important to understand, both in a general and a specific sense, and it is unfortunately the least understood. No complete development of the vocal muscles can be accomplished without knowledge of how to remove interference. This, in turn, requires a knowledge

of the normal physiological functioning of the vocal muscles and of the normal functioning of the swallowing muscles—which are contiguous, but diametrically opposed in their normal functioning. Now, the causes of the various forms and degrees of muscular interference may be directly traced to the condition of mind and mental attitude of the individual, inasmuch as the mind directly or indirectly governs the body more or less perfectly, according to the degree or strength of all purposes, and this for the accomplishment of given ends.

The success of any such accomplishment depends entirely upon the will and understanding, which must be in accord. To will an obviously impossible thing at once proclaims the absence of sufficient understanding, and any attempt at accomplishment of desired ends under such circumstances will, of course, be futile.

Likewise the absence of will to accomplish an end when there is present a perfect understanding of ways and means and a theoretical understanding of cause and effect spells ineptitude.

Fear and faint-heartedness are generally

resultant upon insufficient understanding, but the lack of earnest desire for the accomplishment of an end, or downright laziness, will surely defeat the purpose of any half-hearted constructive measures.

First, there must exist the will to do, and secondly, the will to understand; and so it appears that the will is first dependent upon the understanding, and, second, the understanding is dependent upon the will for the successful carrying out of all purposes.

In the case of a singer-to-be, let it be understood that the desire to sing is generally accompanied by what is known as musical talent, which, though not measurable in a physical sense, is yet distinctly discernible and appreciable in various degrees when the singer sings.

A greater or lesser amount of musical talent and the character of that talent as well as its possible growth, can be estimated from certain standards known to the musical "conoscienti"—though not by a yard-stick or any other absolute measurement.

Musical talent is the prime ingredient in the making of a singer, and to attempt to sing without it, however strong the desire,

would be to attempt the impossible. From this we realize that the success in the undertaking to sing primarily depends upon a certain amount of musical talent which appears as the first manifestation of the instinctive desire to do so.

A man who sings any other tone of the scale than the one he tries to sing—first having heard that tone sounded—immediately betrays the fact that he has not sufficient talent to warrant any great sacrifice in the attempt to learn to sing or to proceed with the idea of making it a chief occupation. Such cases, however, are the exceptions, and not the rule. Now, as everybody has a voice, and as the physiological functioning of the vocal organ is practically the same in song and speech, it follows that almost everybody can learn to sing.

It is not meant by this that everybody can become a grand opera star—and there are many who might wish to sing who would never desire to become one—for various reasons; but to sing in the home, in the church, or possibly in the concert hall is a laudable desire on the part of all, and easily within the range of possibility. There are

hundreds and thousands of young people, and old people too, for that matter, who would like to sing "if they could," as they express it. All such people should be made duly cognizant of the fact that they *can* if they *will*. It is never too late to learn to sing.

It is a fact not generally known that the true vocal cords, being of yellow elastic tissue, do not and are not capable of development and do not easily wear out, and it is entirely possible for them to retain their healthy activity after many other physical attributes commence to decline. Where properly used they do this. In the light of these facts, which are not only duly authenticated but are matters of everyday experience, let no one think that he is "too old to learn to sing" or "has no voice." Let these two popular but erroneous shibboleths be forever discarded!

Assuming that there is present in the individual a certain amount of musical talent and that he has the urge to sing, it is desirable for him first to become acquainted with the nature of the human voice and then to apply the laws of nature to his individual requirements.

The new school of voice production invites this acceptance of axiomatic truth as the fundamental basis for all deductions, and emphasizes that all analogies are permissible but to be recognized only as flights of fancy which may or may not be useful, but which must be understood and classified as pertaining to the realm of poetic license in imagination.

ACTION OF THE MIND IN CONTROL OF THE VOICE

There is little doubt that the discrepancies in correct appraisal of voice in the making, or in its growth, may be accounted for by wrong understanding resultant upon the incorrect training of the ear. This means that very important vocal sounds are accepted as ideally correct—sounds that are not acceptable to the properly educated ear, and that do not conform to the requirements of normal activity under natural law.

Correct estimate of quality is the first requirement of the musical mind through the ear. Muscular development follows mental concept. If this concept accepts and so permits the sounds which are characterized by

false cord interference or by soft palate interference (which has to do with the resonance), then the muscular development of the wrong set of muscles is bound to take place to the great detriment of the singer, both artistic and physical. An incorrect tone is first challenged by the ear. The cause must be sought, and upon the right diagnosis and corrective measure depends the readjustment of physical factors from which good results may continue to come according to the mental endowment or equipment of the singer.

In the formative period it is extremely necessary that the young singer should have the best vocal guide procurable. It is then that the opinions—good or bad—in respect to tone character are built in.

Judgments of all things are quickly formed, but slowly, and sometimes painfully, removed. Hence it is most desirable for the welfare of the singer that no such removal is found to be necessary. The slogan, "slow but sure," is a good one. "Slow but not sure" is a bad one. The first thing is to be sure and then go ahead—slowly, so long as seems necessary, but always surely—the thought

before the action; the judgment being immediately exercised upon the effect.

There are many factors in voice production to be carefully considered in training the voice—which may be better understood by acquaintance with recent developments in psychology.

A PRACTICAL KNOWLEDGE OF PSYCHOLOGY NECESSARY

Therefore a practical knowledge of the influence of psychology in the management of the voice, which is indissolubly connected with the art of vocal expression, will serve as a valuable means to this end.

Emotional and intellectual concepts are the very life of the artist, but up to the present time very little has been actually known regarding the emotions. They are generally recognized through sensations experienced by contact with the world in which we live. As we have a body we are constantly experiencing external contacts, and as we have a mind we likewise experience internal contacts (called mental and spiritual) with our fellow men.

Temperature or energy is the all-pervad-

ing factor in the work-a-day affairs of the world as carried on by the human race, and what are called the ten intimate senses in conjunction with the four major predispositions—all related to the will and understanding—explain in a very definite way the cause and effect of the various activities of life as represented in human affairs.

As touching the life of a public singer we find that confidence and fear (direct opposites in human thought) are attributes which have a great deal to do with the success or failure of vocal undertakings. This is due to the influence of these emotions upon the mind and upon the nervous system.

John B. Watson, a recognized authority on Behaviorism, found that the fear of falling and the fear of a loud noise were the only ones which are originally inherent in the human race. All other fears are "built in" through life's experiences.

The infantile fear of a loud noise seems to have been overcome to a large extent by singers, and very often we fervently wish that it had never been overcome. On the other hand, the fear of a "loud noise" perhaps has become synonymous with "intense tone," or

a tone of great volume, in the minds of some singers, with the result of their fearing to make an intense tone and, therefore, unduly suppressing the vocal action.

Fear causes the contraction not only of the involuntary but of the voluntary muscles of the throat, so that singers influenced by vague and uncontrollable fear, generally referred to as nervousness, expend much more energy than is required and also limit their power of expression to a very noticeable degree.

But when nervous fear, as experienced by many very capable, in fact, by most artists, has been largely overcome, there frequently remains what we might describe as an educated fear of an intense tone. Real vocal freedom is not always thoroughly understood during the training period, and the voice production bears evidence of habitual and most undesirable restraint. Suppression has been the governing principle during the hours of study and remains a constant reminder of improper voice culture so effective in disturbing normal vocal activities—shortening the range, lessening the beauty

and power of the voice, and otherwise limiting the capabilities of the singer.

The fear of making discordant sounds in singing may be overcome by a knowledge of the facts of the vocal phenomena—and this does not necessarily involve calling attention to the physical parts during the act of singing. This knowledge rests in the subconscious mind from suggestion and serves the purpose of supplying the singer with a confidence in his ability which could not otherwise be gained. The use, not the misuse, of knowledge is the thing that counts in the making of a singer.

When we realize that the pitch of tone desired does not depend upon one thing but upon three things in the physical sense, i.e. length, weight, and tension of the vocal cords, that there need be no artificial voice production in singing the tones that are called high notes, and that, with practice governed by correct understanding, one tone may practically become as easy to sing as another, then the fear which is bred of ignorance of the truth commences to lose its power. "A relaxed throat and an intensified breath pressure" is an idea which, if fol-

lowed up conscientiously and persistently, would very likely leave the demonstrator in a perfectly hopeless condition so far as satisfactory singing of the so called high notes is concerned. The very general use of the term "relaxed throat" should be qualified, and what is supposed to be its meaning should be thoroughly explained. It would be much better from every viewpoint to say "relaxed muscles at chin and at the base of the tongue."

Nobody can sing with a relaxed tone mechanism. The freest tones come from a distinctly firm mechanism of the throat. But there should be no willful pushing down of the larynx in singing. Intensified breath pressure is a very misleading term, and if not properly explained creates nothing but an idea of force in the mind of a student. There should be no such consideration as intensified breath in connection with singing high notes, or any other notes for that matter. If breath pressure should be thought of at all, it should be only as an incidental occurrence. If there seems to be a great deal of noticeable breath pressure, the singer may

be sure that he is on the wrong track, and the very strong probability is that he will force his voice by the imagination of such a necessity.

Although successful public singers appeared during the Golden Age of Song without definite knowledge of the physical activities of the vocal mechanism, the percentage of failure and success among the vocal aspirants of the time was never recorded.

Important periods of investigation and experimentation of the scientists took place early in the nineteenth century, the object being to obtain more definite knowledge of the laws governing the illusive art of singing. Up to this time the prevailing thought regarding the prospects of success of a would-be singer was, that if a person had a voice and was musical, he had a chance. For natural voices there was hope, but without an opulent natural voice there was no hope.

The scientific investigators, among whom were included a number of singing teachers as well as distinguished scientists and physicians, hoped to evolve some system of de-

veloping voice where very little voice seemed to exist.

The history of the successive stages of voice development in accordance with scientific light as discovered from time to time shows that the psychological element was almost entirely unrecognized and the methods employed were formulated from new knowledge of the physical activities of the vocal mechanism without taking into consideration the necessity of spontaneous expression.

IGNORING THE SOUL

The attention being directed to mechanical voice production, the heart of the kingdom of song, existing in the soul, and which exerts its influence from within—that subtle power which makes the flesh involuntarily obedient to the will of musical expression—was given scant if any consideration because of the lack of knowledge. This led to a period of vocal decadence which lasted for many years, and it has been but a comparatively short time since the rank and file of vocal students with limited vocal mezzis to start with, could really hope to develop a musical voice of adequate power for public use. At

a later period, singers with natural voices suffered more or less from the infliction of the false vocal theories which were evolved because of undue consideration of the scientific analysis of the physical parts involved without the proper recognition of psychological influences. Hopeful students with a limited natural development usually hoped in vain and eventually retired from the pursuit of the illusive something (it) which was to have made their voices grow into what was worth while.

Notwithstanding all the evil which has been visited upon vocal humanity in the name of science, it was inevitable that such transitory periods should be passed through by those in search of truth. In the meantime, students asked for something which must of necessity contain more than one element, and they were given one element only—as though they might have asked for air or water and were offered hydrogen alone. They might as well have asked for bread and been given a stone—not from any ill will on the part of teachers but chiefly for the reason that a stone was seemingly the best substitute in

sight at the time, and, figuratively speaking, was really mistaken for the bread of vocal life.

PSYCHOLOGY VS. PHYSIOLOGY

During the past two decades there has been a gradual awakening to the fact that there is great necessity for a broader and more comprehensive understanding of the subject of voice culture. The methods based upon psychological conjectures alone, whose advocates have purposely rejected, or from ignorance neglected, all physiological considerations, have really been more successful in producing singers than the purely physiological schools. The latter have been found totally inadequate and have often been disastrous in their results, for the very simple reason that the spiritual factor affecting the laws of nature in such proceedings has been ignored. They have attempted to take out of the hands of nature that which nature proposed to do herself. Inasmuch as the laws of nature are immutable, nothing but failure to accomplish the best results possible, and sometimes disaster, followed in the wake of such proceedings.

Experience has taught us that the over-emphasis of certain established and generally accepted dogmas has been misleading and pernicious in effect, on account of their irrelevancy—or insufficient comprehensiveness.

The structure has been marred by the introduction here and there of considerations which have little or nothing to do with the issue at hand.

THE PROPER STUDY—VOICE

As surely as the proper study of mankind is man, so surely is the proper study of voice production, voice. The study of the vocal mechanism as relative to the art of singing should be conducted at all times with distinct reference to both psychological and physiological relationships. The art of singing is ideally an art of vocal expression, and it must be constantly kept in mind that *compelling* or making the vocal mechanism perform certain gymnastics and *permitting* the vocal mechanism so to perform, inducing the tone, are two different things and represent different principles. Mechanical adjustment must be considered as a concurrent

issue with normal self-expression, in that certain mechanical adjustments may be recognized as resultant physical activities. Without such ever present idealism in vocal training, there is constantly the grave danger of abnormal and incorrect muscular development which so frequently thwarts its own ostensible purpose.

Thus we see that it is most important that the automatic mechanical adjustment go hand in hand with the art of self-expression in vocal training and at all times be subservient to it. It must be considered the means, not the end, of such expression; otherwise there will accrue a fully entangled muscular development of involuntary and voluntary muscles, and the disassociation of the true vocal muscles and the interfering muscles be rendered well nigh impossible.

The principle of local direct or willful control of the tone-producing mechanism leads to the wrong way; and the principle of promoting gradual correct muscular development and the elimination of interference by depending upon the natural muscular co-ordination resulting from spontaneous vocal expression, refraining from attempting to

do anything with the vocal mechanism as such, leads to the right way.

Last but not least let us remember that the well-trained ear is the final court of appeal.

CHAPTER XI

PRACTICAL SUGGESTIONS IN VOICE TRAINING

FIRST, establish a rational concept in the mind of the student as to what Voice really is, and emphasize the fact that the human voice is to be used to express thoughts, feelings and emotions, and that during the singing of Vocalise and Exercises, it should at all times reflect sincerity of purpose to this end.

Impress upon the mind that the air current from breath in exhalation is the factor which starts and maintains the vibration of the cords. The attention of the student should be constantly directed to the sound of the voice, and not to the conservation of the air in the lungs.

Rhythmic breathing promotes regularity of air waves generated at the cords. Continuity of air waves being influenced by regularity of breathing, the singer will gradually acquire what is generally understood as "Breath-control." This is owing to

the action of the true vocal cords, which involuntarily economizes the use of breath.

Make clear at the very outset that putting the voice in the head is not a desirable thought or purpose. The voice in the head is merely an appearance, and the seeming condition is caused by the reflection of the air waves from the upper part of the resonator, these air waves being generated at the vocal cords.

Refer to the mouth, pharynx (upper and lower) as one irregularly shaped resonator. Stiffening the back of the throat, the soft palate, and particularly the back of the tongue, are most fruitful causes of interference both with the vibrator and resonator.

Explain that all tone is better when the fundamental tone is stronger than any of the overtones.

See that the resonance, or the reflection of air waves, is not confused with overtones in the mind of the student.

When regularity of respiration and tone-continuity are established in the use of simple vocalises, have the student close the lips and sing. The only change in the proceeding is the closing of the lips—the air waves con-

tinue but the overtones are subdued. The mind of the student will soon grasp the significance of the meaning of fundamental tone from hearing it in what is known as the *hum*. At this juncture, explain that when the lips open, the tone being continued from the hum, some one of the vowel sounds will be heard, and, as the voice is naturally complex, overtones or vibration of the upper partial tones in conjunction with the fundamental tone will then appear. If there is no other change than the opening and closing of the lips, the continuous expiration will continue to generate tone, and from the consciousness of effect from both hearing and sensation, there will come sufficient practical understanding of fundamental tone and overtones. The *hum* is practically all fundamental tone.

Explain the scientific fact that resonance augments the carrying power of the tone several hundred per cent without additional effort—it is merely a matter of acquired skill in willfully adjusting the resonator at its opening, which is the mouth and lips. This is well illustrated by the tuning-fork set in vibration and placed close to the opening of an attuned resonator.

There are some physical investigators who advance the theory that vowels are formed in the larynx, but you can rest assured that any attempt on your part to do anything of this kind will result in a complication of interferences, both with the vibrator and with the resonator.

Simple vocalise should be used at first, such as the triad—one-three-five-three-one; the consecutive notes of the scale—one to three: one to five; and the octave or one note over the octave and return—ascending and descending scales, or parts of the scale—the arpeggio—and various combinations in general use.

These exercises should be sung with all the so called vowel sounds, taking care that each vowel is correctly produced at the front of the mouth or lips—this is often referred to as “placing the voice,” but it is better not to make the latter suggestion as it is apt to affect adversely the rhythmic action of both the breathing and the series of tones, and it also disturbs the right conception of voice as continuous air-wave motion.

After the singer has obtained a reasonable

control of his tones in the various exercises with all the vowels, the word should be added. Explain that language is the product of words and that words are for the most part combinations of what are now known as vowels and consonants. This is the beginning of the study of diction, which should not be too long delayed.

In order to speak well in song, it is better to have a clear understanding of the relation of vowels and consonants. Consonants may be considered to be the clothing of the vowels—and in singing, as distinguished from speaking, the vowels are more or less prolonged, the consonants being merely articulated—not as a rule sustained. This practically brings about a desirable disassociation of the consonants and vowels. To emphasize this point, exercises may be devised which will promote clear diction to the end that words may be plainly heard during song.

For the development of adequate technique in the nuances, the crescendo and diminuendo may be made on single tones, extending afterwards to the phrase. Regularity of expiration must be carefully preserved

during the singing of such exercises to avoid interference.

To overcome a very general tendency to relax the vibrator during quiet singing, explain that the tone-producing mechanism is never relaxed during singing—it is true that there are various degrees of tension, but the vocal bands have the same relationship to the vocal instrument as the strings of the violin have to the violin, and while there are various degrees of breath-pressure, these degrees are purely resultant from spontaneous expression from desire of effect, as is also the degree of activity of the air-current mechanism.

When these things are understood, we shall commence to realize what vocal freedom means from individual experience.

Interference will no longer be a vague idea of something most intangible, but a well understood though objectionable reality, which can be removed. From the sense of hearing and the sense of comfort and repose in rhythmic motion, in distinction from discomfort and the sense of obtrusive unmanageable forces caused by erratic or spasmodic motion, we shall be able to distinguish the

arch enemy of all vocalists—interference—as the chief cause of the undesirable vocal condition so prevalent.

It is highly important that the contemplation of physical processes of voice, which are known to the singer, should not be in the ascendency during the act of singing. He is at his best when in a healthy state of mind, as well as of body. Confidence and self-assertion are thus best assured in expression. Poise, balance, or equilibrium are seriously impaired by too great attention to physiological processes during the act of singing.

The singer must concentrate upon the delivery of his speech in song, or upon interpretation.

Physical activities of the voluntary act of singing should be automatic from well-formed habits.

Under proper training, the immediate response of all necessary physical activities should coördinate with the spontaneous delivery of the message.

By coloring of tones, we really mean quality—dark, or sombre, white, or bright are explainable as the relative intensities of the partial tones, which are brought about by

the shape of the resonator near the outlet. Reference to the tone-color is merely an attempt to describe tone quality.

What are known as the colorings of the voice may be made clear to the student mind as the quality which is induced by the thoughts and emotions in straightforward, sincere expression, and physically represented by changes in the relative intensities of the partial tones. Any other kind of coloring is bound to be essentially artificial and mechanical, and such singing conveys but poorly, if at all, the ideas which the singer desires to express.

SUGGESTIONS TO SINGERS

In singing, articulate clearly and sustain the vowel sounds. Punctuate with the consonants. Interference is necessary in pronunciation, but should be short lived, so that the vowel position may be instantaneously assumed, or resumed.

Interference can be gradually removed by right action, and the consequent forming of new habits following correct thought from understanding—quickly disassociate the consonants and vowels and sustain the vowels.

Familiarity with various degrees of excellence from attentively listening to one's own voice is imperative. Knowledge of causes, both of desirable and undesirable sounds, must be sought.

During singing the ear must be trained to detect any deviation from the proper course. Constant attention to tone quality and general mode of expression is necessary.

Never sing carelessly. It is only by careful attention to effects that singers make consistent gains. It is highly important that the singer should form the habit of expressing himself in a straightforward, convincing manner. During such expression alone can he estimate the relation of the parts to the whole in the matter of good voice production in conjunction with expressive singing.

Assurance and proper self-assertion reveal and emphasize personality.

Avoid undue relaxation as well as undue tension. The successful jockey in a race is the one who can give his horse freedom of action without too much slackening of the reins.

The whole art of voice production hangs upon the skillful disassociation of the differ-

ent kinds of muscular activities, which can best be accomplished by first understanding their respective normal functionings, and second, by proper use of the will power in directing vocal activities.

Interference is necessarily an integral part of speech sounds used in every language, and it is the preponderance of mixed and noise sounds in some languages, as in the English and German languages, that makes them more difficult to use and to produce tones of essentially musical character.

Irregular vibration characterizes noise sounds; regular vibration characterizes musical sound.

During the early stages of voice training, the student should sing *mezza voce* followed by *piano*, or soft singing, to promote freedom and to remove interference.

To accomplish uniformly good results in training it must be well understood and constantly borne in mind that the voice is produced by the vibrations of the vocal cords, and that the more regular are these vibrations the more steady the voice. Irregularity of vibrations causes uneven voice. No attempt should be made to emphasize the idea

of breath-support as breath-support is a natural consequence of expiration.

If the voice is produced with due attention to distinct utterance in the phrases of song, there is much less liability to interfere. Irregular air currents induce interference.

The vowel "Ah" is the sound which is fundamental. This is the only vowel which may be produced without any fiat of will other than to open the mouth and make a vocal sound. All other vowels require a purposeful shaping of the resonance cavity in the mouth or at the lips.

In extending the range of the voice, attention should be directed particularly to the maintaining of the same quality in singing a succession of sounds. Any interference with regularity of vibration will be reflected in the sound of the voice.

All vowels should be used in practice and never forget that the will power required to change from one vowel sound to another should be directed to the activities of the mouth. The mouth we must consider as the chief factor in the maintaining of uniform quality and in the changing of quality. This is because quality is determined by the rela-

tive intensities of the partial tones (fundamental and overtones) and these are determined very largely by the shape of the resonator.

Expand to breathe—do not breathe to expand. In differentiating between these two essentially different modes of breathing we find that in the first mode we have noiseless intake of air, and more rhythmic action ensues. The lower and upper parts of the lungs fill simultaneously and with less effort. In the second mode the so objectionable noisy intake of air is inevitable. Especially where rapid intake is necessary.

Increasing the range of the voice should be a result of the forming of correct habits in singing the daily exercises. The jaw and the base of the tongue should not be tightened, because this interferes with the normally rapid changes which occur in the tone-producing mechanism in response to tonal requirements.

The rhythmic action of tone impulses accompanied by the willful release of the breath brings about involuntary breath economy. This is as distinguished from willful restraint or control of the breath in exit.

Nature supplies a principle of breath economy in speech and song which will brook no interference. The principle is easily recognized from practical experience and entails the same kind of faith as is required in learning to swim or in jumping from an aëroplane and depending upon the parachute.

"Singing on the line" is sometimes used to prevent pushing up or pulling down or otherwise interfering with the involuntary action of the mechanism; the "line" is of course imaginary.

Pressing on the throat is a common cause of interference with the action of the tone-vibrator and is due for the most part to the general propensity to control the tone at the throat.

Rhythmic impulses should dominate all singing. They are mainly at the upper chest and are followed by steady air currents to the throat. Here the cords are set in vibration. Rhythmic impulses become automatic from habit and the finishing control of tone is properly cultivated at the mouth. The knowledge of where air waves are generated serves as a constant stabilizer of tone, so that the will of the singer to sing any kind of tone

desired meets with an instantaneous response in the coördinate action of the mechanism.

Following this mode of vocal activity there is constantly in the background a tacit understanding and recognition of both *voluntary* automatic vocal action and *involuntary* action of the tone-producing mechanism.

The great shortcoming noticeable in the vocal activities of many singers is the absence of the rhythmic sense and this must be cultivated.

Rhythm is felt and recognized by all to a greater or less extent; but the full importance of rhythmic sense is most felt when made conspicuous by its absence or when not well marked. It must be applied to breathing in singing as well as to tone impulses. Rhythm in its universal sense has had little or no consideration, because in its broader significance it has been little understood.

Articulation of the consonants and vowels should be clear and precise, and all sustaining or prolongation of sound in singing should refer to vowel sounds. The vocal positions, well formed and properly maintained, make for the greatest ease obtainable in voice production and insure the most artistic re-

sults. Under these conditions there will be found a more ready response to all pitch changes, gradual or sudden changes of quality as desired in the expression of the various thoughts and emotions, and much greater facility in the crescendo and diminuendo.

The use of the Humpty Dumpty vocal exercises (see Appendix) provides the practical means of bringing about a prompt release from undesirable vocal habits, and they are strongly recommended for advanced singers as well as beginners.

Bear constantly in mind that words are tremendously momentous things and, as has been truly said, language constitutes a marvelous intellectual endowment. The delivery of the text is of such immense importance that no pains should be spared to make the message intelligible.

Impeccable diction is in no wise incompatible with the production of beautiful and expressive tones.

The well-trained church-choir singer has an especially good opportunity to be of service to his fellow men. This field presents the opportunities of a high calling not to be

despised or undervalued. It takes a good vocal artist to be an acceptable church-choir singer, and it should not be forgotten that the spiritual content of the message from the choir may be of eternal value—more perhaps than is generally realized—and it is particularly impressive when accompanied by the highly necessary reverent attitude of the singers.

ADVICE TO STUDENTS

Work unceasingly and do your level best all the time.

Get your heart into your work, whatever it may be, for work without heart is dead.

Be patient and persevering. "Aspiration without perspiration brings vexation."—Forbes.

Work not too hard but steadily.

Plan for tomorrow, but plod today.

Remember that most failures are self-made.

Expect much, but be content with little.

Think while you work. A machine works but does not think; a man must work and think too.

Keep tab on your progress.

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Don't be too anxious. Anxiety begets restlessness and dissatisfaction.

Maintain high ideals. Aim high and, if your aim is good and you have enough powder, you will sooner or later hit the mark and score toward sure success.

Maeterlinck says: "You will do well to have visions of a better life than that of every day, but it is the life of every day from which the elements of a better life must come."

And Roosevelt: "Far better is it to dare mighty things to win glorious triumphs than to rank with those poor spirits who neither enjoy much nor suffer much because they live in the gray twilight that knows neither victory nor defeat."

Steel your heart against the emotion of jealousy.

Seek the verification of truth in all things. Truth is not always easily discernible. Falsity loves to masquerade as truth. Therefore prove all things so far as possible. The torch to the path of wisdom is lighted by discrimination and investigation.

Be kindly. Kindliness begets kindness.

BEAUTIFUL SINGING

What constitutes beautiful singing?

Beauty is a universal attribute of things spiritual as well as material, which commends itself to all normal people.

The poet expresses beautiful thoughts in beautiful language, ranged in beautifully rhythmic phrases.

The artist draws and paints beautiful scenes from nature, in harmonious colorings which delight the eye.

The singer sings beautifully when he expresses beautiful thoughts through harmonious tones of the voice coupled with appropriate nuances of vocal shading.

We are charmed by the tonal delicacy as well as by the virility of a suitable expression of the ideas which are presented in a song.

We recognize in beautiful singing the intelligent and sympathetic reading of the text, rhythmic grace in delivery of the phrases, and the tonal beauty of the voice itself.

BREATH IN SINGING

Breath is not a primary factor in tone production. Imperfect knowledge of physi-

cal and physiological facts accounts for an erroneous conception in this matter, which is responsible for many of the vocal troubles of teachers, as well as students, in this age. Very little breath is required in singing, when there is little or no interference with the normal action of the vibrator—the true vocal cords—and with the resonator.

There are only two primary and fundamental factors. These are the vocal cords, which originate the air waves (voice), and the resonator, which amplifies the air waves after they leave the vibrator.

The mouth, pharynx (upper and lower) and the nasal cavities form one compound resonator. Breath can neither originate the air waves nor amplify them after they have been originated. Therefore it must be only a secondary factor in voice production.

IMAGINATION

The flight of the undisciplined imagination may lead us skyward or earthward. We may rise or we may fall by following a fanciful idea. An abstract idea is one thing; a concrete idea is quite another. Undisciplined imagination may be very dangerous, if given

sway, and right here is where vocal troubles generally begin.

The imagination must be disciplined by knowledge of facts; and this is the crux of the whole matter. Herein is the value of scientific knowledge. It offers a background for all flights of fancy; and however strong we find the imagination to be—the stronger the better—there will be always present in the mind the sobering influence of the knowledge of facts which will direct artistic flight of fancy, in a judicious and wholesome manner, to a better end.

CHAPTER XII

CONCLUSION

IN THE elucidation of the matter of voice production which has been undertaken in this work, frequent repetition consequent upon the consideration of the subject from different angles has seemed to be unavoidable. Such repetition, however, will doubtless serve to emphasize important phases of the matter.

The central thought I trust will not be lost sight of—and that is that notwithstanding the fact that prevailing methods of voice culture have not embodied the combination of thought and action necessary to produce anything like universal success, it still may be confidently believed that vocal methods may be easily readjusted to conform to the facts of voice production as now understood, and thus may be assured a universality of success in the cultivation of the voice which should be reasonably expected.

The practical application of knowledge concerning the nature of voice will naturally lead to a general acceptance of principles

thus established, which will free the vocal world from many erroneous ideas and have a distinctly beneficial and far-reaching effect upon the future development of vocal art.

It cannot be too strongly emphasized that the relationship between the psychological and physiological factors should be well understood; and, in the teaching of voice production, what to will distinguished from what to permit in the vocal phenomenon should be carefully observed.

The use of terms in accordance with the classification suggested will do a great deal towards clearing the atmosphere of uncertainty in regard to just what is meant and just what is required.

The practical suggestions, it is hoped, may be of service in providing ways and means of overcoming certain difficulties which usually present themselves to the student.

The great purpose of Authentic Voice Production has been to attempt to point out the pitfalls which lie in the path of the vocal pilgrim to the end that they be avoided, and to help solve the vocal problems which daily present themselves to singers and speakers who are serious in their desire to accomplish.

AIMING AT A SENSE OF SECURITY

Utopia, or the state of perfect conditions, may seem far distant, but I believe the time is close at hand when those actuated by high motives and worthy aims and particularly interested in vocal affairs will be able to unite in purposeful endeavor in such a manner that there will soon exist a condition which will embody the sense of security as to vocal well-being, referring alike to teachers and students.

To express one's feelings, thoughts, and emotions in the most effective manner possible is a laudable ambition, and the evidence on every side points to the fact that the "go get it" American characteristic is fully exemplified in lively activity in seeking to accomplish some degree of excellence in song and speech. The great army of vocal teachers bears witness to this fact. All of our would-be singers and speakers are as busy as bees trying to reach their respective goals in as short time as possible—and, incidentally, the over-emphasis of this desire is our national shortcoming. We have yet to realize fully that undue haste makes waste. We want both

the penny and the cake—at least most of us greedy mortals do.

Americans, however, are slowly learning that elevations are not reached in a day, a week, a month or a year, and to reach the heights requires more time and patience than weak brethren and sisters possess, even when they know that their efforts are well directed.

It is hoped that the discussion of vocal matters herein contained may bear fruit in the encouragement of those who possess superior voices and desire to perfect their voices and singing ability, to study the art of voice production and of singing with the idea of making the most of their talent.

It is also hoped that this discussion will bear fruit in the encouragement of those who think that they are not sufficiently endowed by nature to hope ever to accomplish much in a professional way, yet whose lives would nevertheless be made happier if they could improve their voices and be able to sing acceptably in an unpretentious way.

There are many good reasons for the gratification of such desire, and perhaps the best of these reasons are embodied in the

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carefully prepared list issued by the "American Academy of Teachers of Singing" of which I am a member, who are conscientiously and intelligently working in all directions for the betterment of vocal conditions in this country and abroad.

REASONS FOR STUDYING SINGING SET FORTH BY THE ACADEMY

Singing fortifies health, widens culture, refines the intelligence, enriches the imagination, makes for happiness and endows life with an added zest.

Singing is healthful; it develops the lungs and purifies the blood by emptying more completely the lungs of used air and filling them deeply with fresh air.

Singing promotes good bodily posture and graceful carriage.

Singing lends expressiveness to the countenance, and animation to the mind.

Singing increases poise, self-confidence, and develops character through difficulties overcome.

Singing gives a pleasanter, richer voice and improved speech; thereby adding to the charm of personality.

Singing strengthens the memory and the power of concentration.

Singing acquaints one with the inner meaning of words, and thus stimulates deeper insight into poetry and prose.

Singing enables one to understand and enjoy more fully the art of great singers.

Singing awakens living interest in the beauties of music and admits one to the rich and varied treasury of the literature of song.

Singing brings new aspirations and new buoyancy into life through the absorbing pursuit of an ideal.

Singing as a means of self-expression is a medium of release for pent-up emotions.

Singing though followed with no thought of professionalism, gives pleasure to one's self and ultimately to one's friends. Its appeal is universal.

APPENDIX

ANALYSIS OF HUMPTY DUMPTY VOCAL EXERCISES

THE Humpty Dumpty vocal exercises are designed to facilitate the regularization of the scale of the voice and to conjoin the consonantal utterances so that the interferences incident upon the pronunciation of words may not occur unduly to the extent of impairing correct vocal form—to the end that good diction and melodic vocal delivery may be simultaneously acquired.

The Humpty Dumpty vocal exercises used in the “National School of Authentic Voice Production” consists of forty-five graded exercises, the text being supplied from the famous Mother Goose Rhymes, which are at once humorous and highly stimulating to that most valuable factor in song delivery—a highly sensitive imagination. The music of many of these exercises is original, but whenever possible, the words have been attached to well-known vocal exercises representing full scales, part scales,

and intervals of all kinds. The value of rhythm and accent is well exemplified in these exercises, and the uniformly beneficial results which have been in evidence from the first year of their use—both by artists for corrective purposes, and by beginners—have been emphatically noteworthy. For class-instruction they are most effective, affording opportunity for group combinations which promote the development of musical discernment—for instance, the “Baa, Baa, Black Sheep” and “Hey diddle diddle” may be sung by two groups at the same time—the latter being sung through twice while the first is sung once through. This and several similar combinations constitute a splendid training for part singing.

Six of these exercises follow:

Humpty Dumpty

W. WARREN SHAW

Arpeggio and Diatonic Scale
Ascending and descending.

1

Hump-ty Dump-ty sat on a wall, Hump-ty Dump-ty

had a great fall, All the King's hors-es and all the King's men

Could-n't put Hump-ty to- geth-er a- gain, All the King's hors-es and

all the King's men Could-n't put Hump-ty to- geth-er a- gain.

Peter, Peter, Pumpkin Eater

2

Pe-ter, Pe-ter, Pump-kin Eat-er, Had a wife and could-n't keep her,

Put her in a pump-kin shell, And there he kept her ver-y well.

Pe-ter, Pe-ter, Pump-kin Eat-er, Had a wife and could-n't keep her,

Put her in a pump-kin shell, And there he kept her ver-y well.

Baa, Baa, Black Sheep

Arpeggio

12

Baa. Baa, Black Sheep, Have you an - y wool?

Yes, mas - ter, have I, Three bags full,

One for my mas - ter, And one for my Dame, But

none for the lit - tle boy Who cries down the lane.

The musical score is written for a single melodic line and piano accompaniment. The melody is in a simple, folk-like style with a key signature of one flat (B-flat) and a 2/4 time signature. The piano accompaniment consists of a steady bass line and chords in the right hand. The score is divided into four systems, each with a vocal line and a piano accompaniment. The first system includes the instruction 'Arpeggio' and the number '12' in the left margin. The lyrics are written below the vocal line, with hyphens indicating syllables that span across measures. The piano accompaniment features a consistent rhythmic pattern of eighth and sixteenth notes, providing a gentle accompaniment to the vocal melody.

Hey Diddle Diddle

13

Hey Did - die, Did - die, the cat's in the fid - die, The

cow jumped o - ver the moon, The lit - tle dog laughed to

see the sport, And the dish ran a - way with the spoon.

Three Blind Mice

J = 100

27

Three blind mice, See how they run. They

all ran af - ter the far - mer's wife, She cut of their tails with a

carv - ing knife, Did you ev - er hear such a tale in your

life As Three Blind

Mice, Three Blind Mice.

The musical score is written for voice and piano. It features a treble and bass staff for the piano accompaniment and a single treble staff for the voice. The key signature has one sharp (F#), and the time signature is 3/4. The tempo is marked 'J = 100'. The score begins with a piano introduction of four measures. The first vocal line starts at measure 5 with the lyrics 'Three blind mice, See how they run. They'. The piano accompaniment consists of chords in the left hand and a melodic line in the right hand. The second vocal line begins at measure 13 with 'all ran af - ter the far - mer's wife, She cut of their tails with a'. The third vocal line starts at measure 21 with 'carv - ing knife, Did you ev - er hear such a tale in your'. The fourth vocal line begins at measure 29 with 'life As Three Blind'. The fifth vocal line starts at measure 37 with 'Mice, Three Blind Mice.' and ends with a double bar line. The piano accompaniment continues throughout, providing harmonic support for the vocal melody.

For Every Evil

39

For ev-ry e-vil un-der the sun - There is a rem-e-dy,
 or there is none, And if there be one, seek then to find it.
 Or, if there be none at all, nev-er mind it.

The musical score is written for voice and piano. It consists of three systems of music. The first system begins with a treble clef and a key signature of two flats (B-flat and E-flat). The melody is written in the treble clef, and the piano accompaniment is in the bass clef. The lyrics are: "For ev-ry e-vil un-der the sun - There is a rem-e-dy,". The second system continues the melody and accompaniment with the lyrics: "or there is none, And if there be one, seek then to find it,". The third system concludes the piece with the lyrics: "Or, if there be none at all, nev-er mind it." The piano part features chords and single notes in the left hand, and chords in the right hand.

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These exercises from the Humpty Dumpty vocal exercises are printed in "Authentic Voice Production" by courtesy of G. Schirmer, Inc.



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